

Habits and knowledge about toothpaste of students from legion of good will (LBV)

Abstract

The aim of this study was to evaluate the knowledge and habits of students from Centro Educacional José de Paiva Netto, in the city of Rio de Janeiro, considering the use of toothpaste. A questionnaire, with semi-open and closed questions about knowledge and attitudes towards the use of toothpaste and self perception of oral health impact profile (OHIP), was applied to 156 elementary school students, aged 6 to 12 years, and it allowed to evaluate that 65.4% of them reported use toothpaste, 42.3% choose the toothpaste by brand, 23.7% by the price and 72.4% do not look the chemical composition of toothpaste. 122 students have never received a recommendation of the dentifrice by their dentist, 55.1% of students have learned to brush their teeth with their mother and 10.3% with their father, what shows that more than half of the sample did not get guidelines from dentist or dental hygienist. In addition, seven students reported feeling always embarrassed about their oral health condition. It was concluded that students have a low level of knowledge and need more information and guidance about the use of toothpastes and oral health.

Keywords: tooth paste, knowledge, oral health

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Introduction

Tooth decay has successively reduced its incidence in recent decades.^{1,2} Despite the scientific knowledge describe the use of fluoridated toothpaste as one of the responsible for the reduction of the DMFT¹⁻⁶ (number of decayed, missing and filled teeth), most of the population in developing countries have not yet incorporated this knowledge, turning them into habits, as well as the time and amount of dentifrice brushing.⁷⁻¹⁰

According to the World Health Organization (WHO), oral health care should be based on the pillars of oral hygiene orientation, educating and motivating individuals to self-care in order to promote and maintain oral health¹¹ and since health is “[...] complete physical, mental and social well-being”, dentistry has been trying to replace the biomedical model, that values the environmental disease model, where social and physical environments are critical to the health, valuing health.¹² This appreciation imposes the need for new forms of measurement, such as the measurement of perceptions, feelings and behaviors, giving increasing importance to the subjective experiences of each individual and their health and interpretations disease.¹³

The oral health impact profile (OHIP) indicator measures the individual's perception of the bio psychosocial impact of oral disorders associated with quality of life, it was developed by Slade,¹⁴ according to the conceptual model of Locker¹⁵ and its simplified form with 14 items was validated and has been widely used.^{14,16}

The aim of this study was to evaluate the knowledge and habits of students of Educational Center José de Paiva Netto, in the city of Rio de Janeiro, considering the use of toothpastes and their self-perception of oral health.

Literature review

Oral health is regarded as an integral part of overall health, allowing individuals to feed themselves and communicate, being decisive in social confidence, self-esteem and quality of life.^{11,17} Watt⁸ described the challenge of creating opportunities and conditions for individuals and communities to enjoy good oral health.¹⁸ In this context, oral health education is designed to control the risk factors of disease dental caries and gum, among other oral diseases and it is necessary to work the oral health issues grounded in knowledge of each community and awareness is an essential instrument for the importance of oral health in life quality.^{19,20} The health-promoting schools can contribute and take the knowledge to many children. Bring to school environments subsidy to improve overall health, from the promotion of oral self-care, stimulating, interactive and contemporary way, extends citizenship, as it promotes social inclusion and makes individuals participating agents in building a better quality of life for the adoption and promotion of favorable habits to the state of oral health and general.²¹

90% of adult Swedish indicated that brushing teeth once or twice per day.²² In Finland 47% of men and 79% of women reported brushing at least twice a day, while the daily use of fluoride toothpaste was reported by 86% and 96%, respectively⁶ and in Sweden 95% of participants answered brushing teeth twice a day, fluoride toothpaste is used by almost all, about 75% of respondents rinse with water after brushing and only 9% rinse their mouth after brushing with water containing toothpaste.²³

Despite the self-rated health is a subjective evaluation, the group of the World Health Organization (WHO) Quality of Life (QoL) reported that health perceptions, positive or negative, should be measured both

in adults and in children, since that it is important to the impact of oral health perception.²⁴ The evaluation of the self-perception that the individual has regarding your health is not an easy task; however, the association of quality life indicators and oral health are needed for the relevance on planning health promotion actions.²⁵

Among developed indicators, the Brazilian version of the Oral Health Impact Profile (OHIP)-14, translated and validated for the Portuguese of Brazil, has shown excellent psychometric, properties similar to the original instrument.^{26,27}

All questions of OHIP-14 questionnaire are related to oral health.^{26,27} The topic functional limitation includes questions about difficulty speaking and worsening in the taste of food; in the dimension pain, questions are about the sensation of pain and bother to eat; in psychological discomfort dimension, the questions refer to the worry and stress by oral health. The loss in power and the need to have to stop feeding are questions of the dimension physical disability, while in psychological disability questions refer to the difficulty to relax and sense of shame due to the oral condition. The social disability dimension includes irritation with people and difficulties in performing activities of daily routine because of oral health; and the questions about the disability dimension assess if there is a perception that life has become worse and if the person felt totally unable to develop their routine activities.²⁶

Evaluating 3,678 edentulous adults between 18-91 years of age, of both genders, through multiple regression, authors concluded that the style of creation of parents in their children, is strongly associated with oral health in later life, however, it has not significant relation to the presence of psychosocial factors.²⁸ The results of the SB Project-Brazil (2003),²⁹ showed that oral health predisposing factors were associated with self-rated oral health among adults (35-44 years) and elderly (65-74 years) living in southeastern Brazil, as in other countries.²⁹

Legion of Good Will (LBV)

The LBV is an institution that acts in dozens of Brazilian cities, providing quality services that covers the elderly and children, extends to their families. More than 70 socio-educational units between schools, homes for the elderly and community centers for social assistance, which rescue in each attended their self-esteem and turn better their realities.

The social actions of the LBV comply with legal and National Social Assistance Policy, according to the National Grading of Social Assistance Services, in basic social services (coexistence and strengthening of ties).³⁰

The largest unit of the LBV in the State of Rio de Janeiro is called Educational Center José de Paiva Netto, it is in the city of Rio de Janeiro, founded in 1996, and it is located at Avenida Dom Helder Camara, 3214-Del Castilho. It belongs to the Program Area 3.2 in the city of Rio de Janeiro, attended by Family Health Clinic Barbara Starfield (CSF), with a total population of 576,268 people; it has 86 Family Health Strategy Teams and only 30 Oral Health Teams, leading to 51.49% population coverage, so.³¹

Materials and methods

After approval by the Ethics Committee and signing of the Informed Consent Form (ICF) (Annexure I) by those responsible, the

questionnaire Jensen, 2012 and OHIP (Annexure II), both previously validated in Brazil, containing semi open and closed questions about knowledge, oral hygiene habits and toothpaste, was applied in 156 school children, 6-12 years old, of the elementary school education from Educational Center José de Paiva Netto, of the LBV.

Data were collected by the same appraiser, post-graduate student of Public Health and Family, linked to the Department of Social and Preventive Dentistry, Federal University of Rio de Janeiro, who interviewed students and held educational lectures about oral hygiene care and elucidation of questions, in order to make them aware of the importance of oral health care, after their responses to applied questions.

Data were tabulated using SPSS, version 17.0 and the test used was non-parametric chi-square.

Results

The total sample consisted of 156 students, aged between 6-12 years, with: 38 to six years (24.4% of the sample), 105 students aged 7 to 11 years (67.3%) and 13 to 12 years (8.3%).

The frequency distributions according to gender were similar, with 52.6% male and 47.4% female, showing no statistically different results for the genders about the knowledge of fluoride toothpastes and/or OHIP.

Regarding brushing habits, in the question about owning a toothbrush, the entire sample described has a toothbrush, however, of the 156 patients, 102 (65.4%) reported using toothpaste. Of the 156 students, 66 (42.6%) did not report which brand of toothpaste they use, 26 patients prefer the Colgate brand, 17 (10.9%) prefer Tandy and 16 (10.4%), Oral B. One hundred and eighteen students (75.6%) reported that they perform their own brushing, 88 (56.4%) put the toothpaste on the brush by themselves and in 44 (28.2%) cases, this process is carried out by the mother, and 79 (50.6%) placing half size of bristles with dentifrice. Regarding the consumption of fluoridated toothpaste and water supply, 148 (94.9%) did not ingest toothpaste and the predominant water consumption is by 117 (74.4%) students who use the public water supply.

Regarding the quality of life assessed by OHIP, in all questions predominated NEVER answer; although seven people (4.5%) reported always feel ashamed for their oral health condition, as shown in Table 1 below. There was no significant difference between any of the answers on self-perception of oral health and gender, or between age groups of the sample.

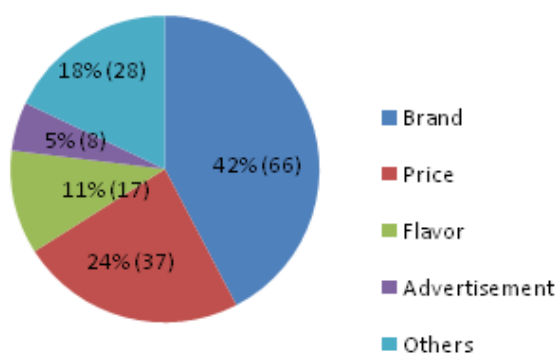
The criterion of choice of toothpaste, predominated 66 students (42.3%) who choose it by brand, 37 (23.7%) by price and the majority, 113 (72.4%), don't look at the chemical composition of toothpaste. There were no significant differences in the choice of toothpaste between the sexes ($P=0.528$) or between age groups ($X_a=53.09$ and $P=0.628$, not significant) (Graph 1).

Although 110 students (70.5%) declare that verify the validity of toothpaste, 45.4% did not know the reasons why they check the validity and preferred to leave without information, only 1.4% described the reason is to check the presence of fluoride and 4.2% said that it is important to verify the effectiveness of toothpaste. The other answers were dispersed, like not having habit, forget and not be interested, for example.

Table 1 Simple frequency distributions and percentages of answers about Oral Health and Quality of Life. Rio de Janeiro. LBV, 2014

Questions	Always	Repeatedly	Sometimes	Rarely	Never	Total
Have you had trouble speaking because of problems with your teeth / mouth?	3(1.9%)	1(0.6%)	10(6.4%)	11(7.1%)	131(84.0%)	156(100%)
Did you feel change in the taste of food because of problems with your teeth?	-----	-----	14(9.0%)	10(6.4%)	132(84.6%)	156(100%)
Did you feel severe pain in the mouth?	2(1.3%)	-----	38(24.4%)	27(17.3%)	89(57.1%)	156(100%)
Have you been bothered by eating some food because of problems with your teeth?	6(3.8%)	2(1.3%)	34(21.8%)	25(16.0%)	89(57.1%)	156(100%)
Have you been ill at ease because of problems with your teeth?	3(1.9%)	1(0.6%)	26(16.7%)	17(10.9%)	109(69.9%)	156(100%)
Did you feel stressed because of problems with your teeth / mouth?	3(1.9%)	1(0.6%)	25(16.0%)	14(9.0%)	113(72.4%)	156(100%)
Have your food been hampered because of problems with your teeth/mouth?	3(1.9%)	-----	26(16.7%)	12(7.7%)	115(73.7%)	156(100%)
Did you have to stop your meals because of problems with your teeth?	4(2.6%)	-----	22(14.1%)	11(7.1%)	119(76.3%)	156(100%)
Do you have found difficult to relax because of problems with your teeth?	2(1.3%)	-----	12(7.7%)	14(9.0%)	128(82.1%)	156(100%)
Have you ever felt embarrassed because of problems with your teeth?	7(4.5%)	-----	32(20.5%)	8(5.1%)	109(69.8%)	156(100%)
Have you been angry with other people because of problems with your teeth?	3(1.9%)	-----	11(7.1%)	10(6.4%)	132(84.5%)	156(100%)
Have you had difficulties in performing daily activities because of problems with your teeth?	3(1.9%)	-----	9(5.8%)	9(5.8%)	135(86.5%)	156(100%)
Did you feel that your life in general got worse because of problems with your teeth?	5(3.2%)	-----	10(6.4%)	10(6.4%)	131(84.0%)	156(100%)
Aren't you doing your daily activities because of problems with your teeth?	3(1.9%)	-----	7(4.5%)	6(3.8%)	140(89.7%)	156(100%)

How do you choose your toothpaste?



Graph 1 Simple frequency distributions and percentages as: How do you choose your toothpaste?

About the use of toothpaste as a treatment: 131 (84.0%) did not use toothpaste as treatment and among the rest that did, 88.5% do not have information about the toothpaste used or treatment.

Among the 156 students, 118 (75.6%) reported that the whole family uses the same toothpaste. Most 126 (80.8%), never asked for

guidance on which toothpaste to use. Of the 30 patients who a

sked for guidance on which one to use, 24 (15.4%) asked the dentist, however, the 156 students, 122 (78.2%), never received the recommendation of the dentifrice by dentist. On the question asking if the patient think that the dentist should recommend the toothpaste and why, 139 (89%) did not give information and six people (3.8% of the sample) reported that it should be done because of the sensitivity dentin.

About dentist’s recommendation on some kind of special bristle, there was no recommendation by brand in 131 students (84.0%), however when asked which toothbrush were using at the time, the main results showed that: 55 (35.4%) did not answer; 32 (20.8%) use oral B, 31 students (20.1%) use Colgate and 2 people (1.3%), use brush received by Shaheed Udham Singh College of Engineering & Technology (SUS) us and the same quantity / percentage for the more cheap toothbrush. Of the total of 156 participants, 114 (73.1%) reported that the dentist does not also recommended no special technique of brushing. There was no significant difference between age groups ($X_a = 35.59$, where $P = 0.747$, so, not significant).

When asked about the toothpaste they were currently using and why, most 63 (40.4%) were using Colgate, and 88 students of the sample (56.4%) did not give information about why and 16 students (10.3% of the sample), claimed to be the best. The results are shown in Tables 2.1&2.2.

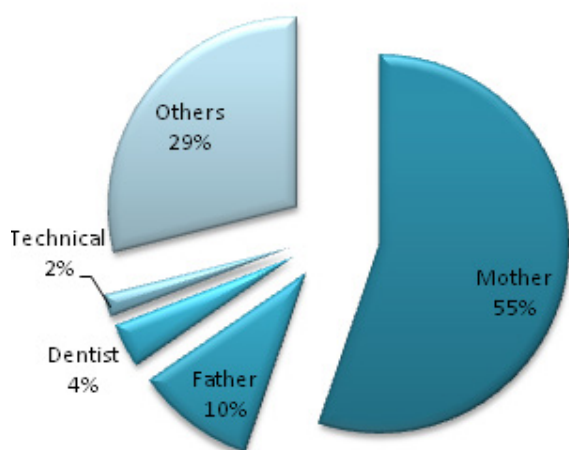
When asked about who taught them how to brush their teeth, of the 156 patients, 86 (55.1%) were taught by mother and 16 (10.3%) by the father, and three cases (1.9%) reported having learned from the oral health technical (TSB) and six (3.8%), with the dentist, as best seen in Graph 2.

Table 2.1 Distributions of simple frequencies and percentage about the toothpaste used at the time. Rio de Janeiro. LBV, 2014

What Toothpaste are you using now?	Simple Frequency	%
No Information	33	21.2
Close-up	11	7.1
Colgate	63	40.4
Colgate and Oral B	6	3.8
Oral B	28	17.9
Sensodyne	2	1.3
Sorriso	5	3.2
Tandy	6	3.8
Luminous White	1	0.6
Total	156	100

Table 2.2 Simple frequency and percentage distributions about the choice of toothpaste. Rio de Janeiro. LBV, 2014

Why are you using your toothpaste now?	Simple Frequency	%
No Information	88	56.4
Whitening	11	7.2
Refreshing	8	5.2
It's the best	16	10.3
Indicated by the dentist	12	7.7
Protection	6	3.8
Habit	5	3.2
Without fluoride	6	3.8
Sensibility	4	2.4
Total	156	100



Graph 2 Who have taught you how to brush your teeth?

Discussion

School has an important role to creating opportunities that promote initiatives for health education. Health education can influence more directly on improving the life quality of the student, providing tools for building a healthy individual.²¹

When comparing the data from this study with the Jensen et al.,³² and Lourenco et al.,³³ there were divergent results, since the cited authors found significant differences at the level of 1%, between age groups, which were not observed in this study. However, in this study, the sample group was only from childhood to adolescence, while the work of Lourenco et al.,³³ included the age group 5-44 years.

This study identified a sample group (seven people-4.5%) who reported always feel ashamed for their oral health condition, demonstrating a psychological discomfort,¹⁵ these findings are corroborated by Lourenco et al.,³³ and the data on self perception described in SB Brazil 2003,³⁴ where it was observed that younger ages had lower rates in the perception of oral health impact on quality of life, unlike the data described by Steele et al.,²⁸ who found no relationship between oral health and the presence of psychosocial factors. However, it is always important to assess the self-perception of oral health, as these data provide additional information for health policy-making in demographic planning.³⁵

About the criterion of choice of toothpaste, in the present study predominated the choice by brand in 66 children (42.3%) and 37 children (23.7%) by the price. In addition, the majority, 113 (72.4%), does not look the chemical composition of the toothpaste, which is corroborated by Jensen et al.,³² where the price proved to be the most important factor in determining the toothpaste, however the their compliance with the chemical composition and give preference to toothpaste containing fluoride, unlike the respondents in this study.

Almost most, but not all of the sample, use toothpastes, as described by Wiken et al.²³ Regarding knowledge about oral hygiene, these findings are different from the results found by Jensen et al.,³² since there was no significant difference in any of the questions on self-perception of oral health among males and females and or between the ages of 6 school sample to 12 years. While the study of Jensen et al.,³² women demonstrated greater knowledge in relation to men and the elderly showed less knowledge about the knowledge of oral hygiene than younger.^{32,33}

Thus, this study highlighted the results that dentists or oral health technician weren't responsible for offering guidance on brushing and self-care with oral health, where the results show that the teachings of brushing to the students were made by mothers, in addition, most of the sample never received guidance on brushing technique or recommendation to use toothpaste by dentists.

These factors could justify the need to increase the number of oral health teams in the AP 3.2, which currently has 30 Oral Health Teams, that would allow these students better access to health promotion, showing, therefore, the need to practice health education content, through appropriate methodologies to physical, mental and emotional development of children by professionals, to allow children to incorporate the knowledge into their living habits, especially those related to mouth and teeth, as corroborated by Watt.¹⁸

About dentists who work in the area of Educational Center José de Paiva Netto, of the Legiao da Boa Vontade (LBV), do not

recommend brushes, it can be inferred that the low number of Oral Health Teams for the population of the region, would not allow time for teams practicing necessary guidance and/or Educational Center José de Paiva Netto, in the AP 3.2, is not included yet in the School Health Program (PSE) of this program area (AP) and/or the formation of these professionals can be further surgical-restorative.

Conclusion

The level of knowledge of the students is still not enough, and the consequent incorporation of habits of the age groups assessed too. Knowing the self-perception of oral health will allow the development of educational activities that address the bio-psychological dimension of the individual and their social context.

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Conflicts of interest

The author declares there is no conflicts of interest.

References

1. Marinho VC, Higgins JP, Sheiham A, et al. Fluoride toothpastes for preventing dental caries in children and adolescents. *Cochrane Database Syst Rev.* 2003;1:CD002278.
2. Bratthall D, Hansel Petersson G, Sundberg H. Reasons for the caries decline: what do the experts believe? *Eur J Oral Sci* 1996;104(4):416–422.
3. Marinho VC, Higgins JP, Logan S, et al. Fluoride mouthrinses for preventing dental caries in children and adolescents. *Cochrane Database Syst Rev.* 2003;3:CD002284.
4. Marinho VC, Higgins JP, Logan S, et al. Fluoride varnishes for preventing dental caries in children and adolescents. *Cochrane Database Syst Rev.* 2002; 3:CD002279.
5. Marthaler TM. Changes in dental caries 1953-2003. *Caries Res.* 2004;38(3):171–181.
6. Twetman S, Axelsson S, Dahlgren H, et al. Caries preventive effect of fluoride toothpaste: a systematic review. *Acta Odontol Scand.* 2003;61(6):347–355.
7. Richards A, Fejerskov O, Larsen MJ. *Fluoride concentrations in dentifrices in relation to efficacy, side-effects and salivary clearance.* In: Embery G, Rolla G, Editors. Oxford: Clinical and biological aspects of dentifrices. 1992.
8. Sjogren K, Birkhed D. Effect of various post-brushing activities on salivary fluoride concentration after tooth brushing with sodium fluoride dentifrice. *Caries Res.* 1994;28(2):127–131.
9. Davies RM, Ellwood RP, Davies GM. The rational use of fluoride toothpaste. *Int J Dent Hyg.* 2003;1(1):3–8.
10. Zero DT, Creeth JE, Bosma ML, et al. The effect of brushing time and dentifrice quantity on fluoride delivery *in vivo* and enamel surface micro hardness *in situ*. *Caries Res.* 2010;44(2):90–100.
11. Petersen PE. The World Oral Health Report 2003: continuous improvement of oral health in the 21st century the approach of the WHO Global Oral Health Programme. *Community Dent Oral Epidemiol.* 2003;31(Supply 1):3–24.
12. Volpe AR, Petrone ME, Devizio W, et al. A review of plaque, gingivitis, calculus and caries clinical efficacy studies with a fluoride dentifrice containing triclosan and PVM/MA copolymer. *J Clin Dent.* 1996;7:1–14.
13. Steiner M, Helfenstein U, Menghini G. Effect of 1000 ppm relative to 250 ppm fluoride toothpaste. A meta-analysis. *Am J Dent.* 2004;17(2):85–88.
14. Slade GD. Derivation and validation of a short-form oral health impact profile. *Community Dent Oral Epidemiol.* 1997;25(4):284–290.
15. Locker D. *Concepts of oral health, disease and the quality of life.* In: Slade GD, Editor. *Mensuring oral health and quality of life.* 1997.
16. Oliveira BH, Nadanovsky P. Psychometric properties of the Brazilian version of the Oral Health Impact Profile-short form. *Community Dent Oral Epidemiol.* 2005;33(4):307–314.
17. Bernabe E, Watt RG, Sheiham A, et al. Sense of coherence and oral health in dentate adults: findings from the Finnish Health 2000 survey. *J Clin Periodontol.* 2010;37(11):981–987.
18. Watt RG. Strategies and approaches in oral disease prevention and health promotion. *Bull World Health Organ.* 2005;83(9):711–718.
19. Flanders RA. Effectiveness of dental health educational programs in schools. *J Am Dent Assoc.* 1987;114(2):239–242.
20. Kay E, Craven R. *Promoting oral health in populations.* In: Fejerskov O, Kidd EAM, editors. *Dental Caries The Disease and its Clinical Management.* 2nd ed. 2008.
21. Organización Panamericana de la salud (OPAS). *Health promoting schools: healthy environments and better health for future generations.* 1998.
22. Hugoson A, Koch G, Gothberg C, et al. Oral health of individuals aged 3-80 years in Jonkoping, Sweden during 30 years (1973-2003). II. Review of findings on dental care habits and knowledge of oral health. *Swed Dent J.* 2005;29(4):139–155.
23. Albertsson KW, van Dijken JW. Awareness of toothbrushing and dentifrice habits in regularly dental care receiving adults. *Swed Dent J.* 2010;34(2):71–78.
24. Broder HL, Genderson MW. Reliability and convergent and discriminant validity of the Child Oral Health Impact Profile (COHIP Child's Version). *Community Dent Oral Epidemiol.* 2007;35(Supply 1):20–31.
25. Nadanovsk P. *Health promotion and the prevention of oral diseases.* In: Pinto VG, editor. *Collective Oral Health.* 4th ed. 2000.
26. Slade GD, Spencer AJ. Development and evaluation of the oral health impact profile. *Community Dent Oral Epidemiol.* 1994;11(1):3–11.
27. Almeida AM, Loureiro CA, Araujo VE. *A cross-cultural study of oral health values using the OHIP-14 (Oral Health Impact Profile) instrument in the form simplifies part I: Cultural and linguistic adaptation.* 2004.
28. Steele JG, Sanders AE, Slade GD, et al. How do age and tooth loss affect oral health impacts and quality of life? A study comparing two national samples. *Community Dent Oral Epidemiol.* 2004;32(2):107–114.
29. Matos DL, Lima Costa MF. Oral health self-assessment among adults and elderly residents in the Southeast Region: result of the SB-Brazil Project, 2003. *Cad Saude Pública, Rio de Janeiro.* 2006;22(8):1699–1707.
30. Legion of Good Will. 2014.

31. Secretaria Municipal de Saúde do Rio de Janeiro.
32. Jensen O, Gabre P, Skold UM, et al. Is the use of fluoride toothpaste optimal? Knowledge, attitudes and behaviour concerning fluoride toothpaste and toothbrushing in different age groups in Sweden. *Community Dent Oral Epidemiol.* 2012;40(2):175–184.
33. Lourenço CL, Caroline, Sonia Groisman S, et al. *Oral health profile in children in city of god.* 2014.
34. Ministério da Saúde. SB Brasil 2003 Project: Oral Health Conditions of the Brazilian Population 2002-2003: Main Results. Brazil: Ministry of Health, Brazil. 2004.
35. Woelber JP, Bienas H, Fabry G, et al. Oral hygiene related self-efficacy as a predictor of oral hygiene behavior: a prospective cohort study. *J Clin Periodontol.* 2015;42(2):142–149.