#### **Original Article**



# Essential services in children's family dentistry program and the role of dental hygienists

Seung-Hun Lee

Department of Dental Hygiene, Sahmyook Health University

Corresponding Author: Seung-Hun Lee, Department of Dental Hygiene, Sahmyook Health University, 82 Mangu-ro, Dongdaemun-gu, Seoulsi, 02500, Korea. Tel: +82-2-3407-8621, Fax: +82-2-3407-8639, E-mail: smili@hanmail.net

# ABSTRACT

**Objectives:** The aim of this study was to investigate the essential services, importance, interval of examinations, and role of dental hygienists in children's family dentistry program. **Methods:** A total of 124 participants completed a self-administered questionnaire. The data were analyzed using independent t-test, and ANOVA, and Pearson correlation analysis. **Results:** All participants stated that oral examination and panoramic radiography are required; children should be educated about brushing, use of oral products, and regular check-ups; and preventive treatments such as molar sealants and prophylaxis should be offered. They stated that light-curing resins and glass ionomer fillings should be offered in treatment services. They stated that examination intervals should be shorter for education and prevention rather than treatment. Dental hygiene students were more likely than dentists and dental hygienists to say that the program was more important. There was a correlation between oral examinations and education and treatment, and between essential services and their importance. **Conclusions:** Services considered essential and important should be emphasized not only to dental hygiene students but also to dental hygienists and dentists who are the main providers of services.

Key Words: Child, Dental hygienist, Dentist, Family doctor, Health education, Primary dental care system

# Introduction

With a declining birth rate and a rapidly aged society, Korea has the highest growth rate in health expenditure in the Organisation for Economic Co-operation and Development (OECD). Public health insurance coverage in Korea is very low, and although insurance operations and finances are concentrated in the central government, medical care is highly dependent on the private sector. Due to the lack of control and management of uninsured medical care services, the burden of medical costs is expected to increase in the future [1].

According to the survey on medical expenses for health insurance patients, the health insurance coverage rate is 25.6% for dental hospitals and 36.0% for dental clinics, which is very low compared to other medical facilities, resulting in high patient burden [2]. The patient burden is higher than in other countries, which may lead to health inequalities based on socioeconomic status. In particular, children's oral health is strongly influenced by where they live and by their parents, so providing more preventive dental services to children could improve oral health and reduce costs [3].

Previous studies have shown that health is unequal across socioeconomic levels [4], and oral health is also inversely correlated with the Decayed, Missing and Filled Teeth Index (DMFT Index) in 12-year-old children and the ratio of health and medical budget to national income per capita [5]. In 2009, dental sealants were included in the health insurance coverage as a preventive service,

but this still focused on treatment rather than preventive comprehensive oral health care, which is very important for oral disease management [6].

In recent years, the government has repeatedly called for the introduction of a national primary care system to improve the efficiency of the healthcare system. This system can improve people's health and raise the level of primary healthcare services. It is also known to be beneficial to residents and the government by increasing health insurance coverage and reducing health care costs [7]. The dental primary care scheme prioritizes the promotion of preventive oral health. It is expected to achieve greater results when targeted at children, who are most likely to benefit. With this expectation, developed countries are already providing dental care for children and adolescents [8].

In the US, the Patient-Centered Medical Home (PCMH) reports that early preventive dental care improves oral health, and the American Academy of Pediatric Dentistry (AAPD) reports that it provides cost-effective, high-quality dental services [9]. However, the UK's the new dental contract reform: prototypes overview document reported that although the program improved oral health by preventing caries and periodontal disease in patients, it did not achieve its aims because this activity carried out over smaller number of patients and fewer treatment [10].

A recent evaluation of the governance of the student dental primary care program in Seoul [11], it requires joint efforts and consensus among professionals, including not only dentists but also dental hygienists' associations and academics, and that dental hygienists should share the need and purpose of the program and become stakeholders in the provision of oral health services, rather than simply participants who receive the program. Dental hygienists are professionals who provide education to prevent oral disease and promote oral health, and their role in dental care service is important. Students, as future dental hygienists, need to understand the role and needs of dental hygienists in primary dental care. Therefore, the study population included dental hygienists, students and dentists interested in the children's dental primary care program.

## Methods

#### 1. Subjects

A total of 145 dental hygienists, students, and dentists in Jeollanam-do were included in the study. This study was approved by the Institutional Review Board the of C College (CA17-211228-HR-002-01) and was conducted online for a total of 4 weeks from July 2022. The minimum sample size was calculated to be 116. Using the G\*power program [12,13], a significance level of 0.05, a power of 80%, an odds ratio of 0.77 for the comparison reference group in the previous study and an expected ratio of 0.5 for the comparison target group in this study were calculated, and the method of analysis was the chi-squared test. Assuming a dropout rate of 20%, 124 subjects were eligible for analysis. The ratio for the comparison group was based on the results of the needs assessment of the primary care program in a previous study [14].

#### 2. Methods

stionnaire consisted of 16 items, including 4 items on the general characteristics of the study population, 4 items on the need for services, 4 items on the importance of the services and 4 items on the frequency of service provision. The need for services was multi-response, the importance of services was based on a 5-point Likert scale, and the frequency of service provision was selected from 3, 6, and 12 months. The questionnaire was adapted from Choi's study [15] and modified for this study.

#### 3. Analysis method

The data collected were analysed using SPSS 18.0. Independent t-test and ANOVA were used to compare differences in the roles and needs of dental hygienists according to general characteristics, and correlations were analysed. Post hoc tests were analysed using Scheffé's test. In addition, to check the internal reliability of the questions, Cronbach's alpha was calculated and was 0.850 for oral examination, 0.846 for oral health education, 0.848 for preventive treatment and 0.867 for dental treatment.

## Results

#### 1. General characters of study subjects

The general characteristics of the study participants are shown in <Table 1>. The final number of subjects was 124, excluding 21 who did not complete the questionnaire. 77.4% were female and most were in their 20's (58.9%). 64.5% were from Suncheon and 36.3% were dental hygienists.

Characteristics	Division	N(%)
Gender	Female	96(77.4)
	Male	28(22.6)
Age (yr)	>30	73(58.9)
	$\leq 30$	51(41.1)
Region	Suncheon	80(64.5)
	Other	44(35.5)
Occupations	Dental hygienist	45(36.3)
	Dentist	36(29.0)
	Student	43(34.7)
Total		124(100.0)

Table 1. General characteristics of the study subjects

#### 2. Essential services, importance, period of service, and providers by variable

As shown in <Table 2>, oral examination (21.8%) and panoramic radiographs (21.8%) were high on the list of essential services, whereas bitewing radiographs (5.8%) and screening for dysplasia (6.0%) were low. In oral health education, people were more likely to be taught how to brush their teeth (14.1%), how to use oral products (12.6%) and the importance of regular dental check-ups (12.3%), and less likely to be taught how to prevent bad oral habits (6.2%), how to stop drinking and smoking (7.4%) and how to prevent dental trauma (7.4%). In terms of preventive dental care, molar sealants (17.5%) and prophylaxis (15.5%) were high, while fluoride iontophoresis (7.1%) and primary molar sealants (8.4%) were low. In dental treatment, light-curing resin fillings (19.8%) and glass ionomer(GI) fillings (17.0%) were high, while amalgam fillings (4.1%) and self-curing resin fillings (7.2%) were low.

The importance of oral examination items was high for oral examination (4.69 points) and panoramic radiograph (4.45 points), but low for bitewing radiograph (3.27 points) and screening for dysplasia (3.73 points). The importance of oral health education was high for tooth brushing methods (4.92 points) and dental check-ups (4.92 points), but low for prevention of bad oral habits (3.77 points) and prevention of dental trauma (3.98 points). In preventive care, molar sealants (4.67 points) and oral prophylaxis (4.44 points) scored high, while fluoride iontophoresis (3.48 points) and primary molar sealants (3.65 points) scored low. In dental treatment, light-curing resin fillings (4.66 points) and endodontics (4.44 points) were high, while amalgam fillings (2.9 points) and self-curing resin fillings (3.69 points) were low.

Examination intervals were more likely to be 12 months (46.9%) or 6 months (44.6%), oral health education intervals were more likely to be 6 months (39.4%) and 12 months (37.7%), and preventive care intervals were more likely to be 6 months (41.3%) and 12 months (36.1%), but treatment intervals were more likely to be 12 months (41.3%).

Radiographs (96.8-98.4%) and plaque assay (64.5%) were considered appropriate by dental hygienists, whereas dentists dental considered dysplasia screening (95.2%), malocclusion checks (93.5%), oral examination (81.5%), and caries activity test (60.5%)

appropriate. Oral health education (62.7%) and preventive care (74.5%) were more likely to be provided by dental hygienists. Dental treatment is not performed by dental hygienists, so it was not investigated and analysed.

$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	<b>Fable 2.</b> Essential services, importance, delivery frequency, and providers of programUnit: N(%)								
Variables         Description levelves $\overline{Mean\pm SD}$ $\overline{3}$ 6         12         Dentist         Dentist           Examination         0ral examination         116(21.8) $4.69\pm0.50$ 28(22.6)         83(66.9)         13(10.5)         23(0.8.5)         100(81.5)           Plaque assay         73(3.7) $3.97\pm0.87$ 12(9.7)         77(62.1)         35(28.2)         80(64.5)         44(35.5)           Periapical radiography         60(11.3)         4.0±0-074         48(6.5)         66(63.2)         50(40.3)         122(98.4)         21.6)           Bite wing radiography         31(5.8)         3.27\pm1.16         86.5         44(32.2)         71(57.3)         86.5)         116(93.5)           Dental dysplasia screening         32(0.0)         3.7±1.04         40(3.2)         21(16.9)         99(79.8)         6(4.8)         118(95.2)           Caries activity test         53(20.0)         3.99\pm0.96         85(8.6)         442(34.6)         445(35.5)         74(6.0)         74(6.0)         74(6.0)         74(6.0)         74(6.0)         74(6.0)         74(6.0)         74(6.0)         74(6.0)         74(6.0)         74(6.0)         74(6.0)         74(6.0)         74(6.0)         74(6.0)         74(6.0)         74(6.0)	<b>W</b>		Importance Period(month			n)	Prov	Provider	
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Malocclusion checks $54(10.2)$ $3.91\pm0.86$ $0(0.0)$ $53(42.7)$ $71(57.3)$ $8(6.5)$ $116(93.5)$ Dental dysplasia screening $32(6.0)$ $3.73\pm1.04$ $4(3.2)$ $21(16.9)$ $99(79.8)$ $6(4.8)$ $118(95.2)$ Caries activity test $50(9.4)$ $3.77\pm0.91$ $21(16.9)$ $45(36.3)$ $58(46.8)$ $49(39.5)$ $75(60.5)$ Subtotal $532(100.0)$ $3.99\pm0.96$ $85(8.6)$ $442(44.6)$ $465(46.9)$ $530(53.4)$ $462(46.6)$ Oral health education $T$ $T$ $T$ $71(57.3)$ $50(47.6)$ $57(46.0)$ $57(46.0)$ $67(54.0)$ Importance of childhood care $88(0.0)$ $4.62\pm0.52$ $47(37.9)$ $59(47.6)$ $18(14.5)$ $74(59.7)$ $50(40.3)$ Brushing methods $114(14.1)$ $4.92\pm0.27$ $22(17.7)$ $64(51.6)$ $88(30.6)$ $120(96.8)$ $4(32.2)$ Using oral care products $102(12.6)$ $4.65\pm0.48$ $29(23.4)$ $30(31.5)$ $56(45.2)$ $114(91.9)$ $10(8.1)$ Fluoride and tooth decay $86(10.6)$ $4.29\pm0.71$ $29(23.4)$ $63(53.2)$ $82(66.1)$ $42(33.9)$ No smoking and drinking $60(7.4)$ $4.09\pm0.86$ $34(27.4)$ $40(32.3)$ $50(40.3)$ $76(61.3)$ $48(38.7)$ Preventing dental trauma $60(7.4)$ $398\pm0.85$ $17(13.7)$ $44(35.5)$ $63(50.8)$ $60(48.4)$ $64(51.6)$ Importance of dental check-ups $100(12.3)$ $398\pm0.85$ $17(13.7)$ $44(35.5)$ $40(32.3)$ $64(8.4)$ <t< td=""><td>Bite-wing radiography</td><td>31(5.8)</td><td><math>3.27 \pm 1.16</math></td><td>8(6.5)</td><td>44(35.5)</td><td>72(58.1)</td><td>120(96.8)</td><td>4(3.2)</td></t<>	Bite-wing radiography	31(5.8)	$3.27 \pm 1.16$	8(6.5)	44(35.5)	72(58.1)	120(96.8)	4(3.2)	
Dental dysplasia screening $32(6.0)$ $3.73\pm1.04$ $4(3.2)$ $21(16.9)$ $99(79.8)$ $6(4.8)$ $118(95.2)$ Caries activity test $50(9.4)$ $3.77\pm0.91$ $21(16.9)$ $45(36.3)$ $58(46.8)$ $49(39.5)$ $75(60.5)$ Subtotal $532(100.0)$ $3.99\pm0.96$ $85(8.6)$ $442(44.6)$ $465(46.9)$ $530(53.4)$ $462(46.6)$ Oral and body health $82(10.1)$ $4.06\pm0.76$ $21(16.9)$ $99(31.5)$ $64(51.6)$ $57(46.0)$ $67(54.0)$ Importance of childhood care $88(10.9)$ $4.62\pm0.22$ $47(37.9)$ $59(47.6)$ $18(4.5)$ $74(59.7)$ $50(40.3)$ Brushing methods $114(14.1)$ $4.92\pm0.27$ $22(17.7)$ $64(51.6)$ $38(30.6)$ $120(96.8)$ $4(3.2)$ Using oral care products $102(12.6)$ $4.65\pm0.48$ $29(23.4)$ $39(31.5)$ $56(45.2)$ $114(91.9)$ $10(8.1)$ Fluoride and tooth decay $86(10.6)$ $4.29\pm0.71$ $29(23.4)$ $60(48.4)$ $35(28.2)$ $82(66.1)$ $42(33.9)$ No smoking and drinking $60(7.4)$ $4.09\pm0.86$ $34(27.4)$ $40(32.3)$ $50(40.3)$ $76(61.3)$ $48(38.7)$ Preventing dental trauma $60(7.4)$ $4.99\pm0.85$ $17(13.7)$ $44(35.5)$ $63(50.8)$ $60(48.4)$ $64(51.6)$ Importance of dental check-ups $100(12.3)$ $4.92\pm0.79$ $28(22.6)$ $29(23.4)$ $67(54.0)$ $56(45.2)$ $68(54.8)$ Subtotal $810(1000)$ $4.33\pm0.79$ $28(22.6)$ $29(23.4)$ $67(54.0)$	Malocclusion checks	54(10.2)	3.91±0.86	0(0.0)	53(42.7)	71(57.3)	8(6.5)	116(93.5)	
Caries activity test50(9.4) $3.77 \pm 0.91$ 21(0.6.9) $45(36.3)$ $58(46.8)$ $49(39.5)$ $75(60.5)$ Subtotal $532(100.0)$ $3.99 \pm 0.96$ $85(8.6)$ $442(44.6)$ $465(46.9)$ $530(53.4)$ $462(46.6)$ Oral and body health $82(10.1)$ $4.06 \pm 0.76$ $21(16.9)$ $39(31.5)$ $64(51.6)$ $57(46.0)$ $67(54.0)$ Importance of childhood care $88(10.9)$ $4.62 \pm 0.52$ $47(37.9)$ $59(47.6)$ $18(14.5)$ $74(59.7)$ $50(40.3)$ Brushing methods $114(14.1)$ $4.92 \pm 0.27$ $22(17.7)$ $64(51.6)$ $38(30.6)$ $120(96.8)$ $4(3.2)$ Using oral care products $102(12.6)$ $4.65 \pm 0.48$ $29(23.4)$ $39(31.5)$ $56(45.2)$ $114(91.9)$ $10(8.1)$ Fluoride and tooth decay $86(10.6)$ $4.29 \pm 0.71$ $29(23.4)$ $60(48.4)$ $35(28.2)$ $82(66.1)$ $42(33.9)$ Eating and nutrition $68(8.4)$ $4.01 \pm 0.79$ $19(5.3)$ $43(34.7)$ $62(50.0)$ $82(66.1)$ $42(33.9)$ No smoking and drinking $60(7.4)$ $4.09 \pm 0.86$ $34(27.4)$ $40(32.3)$ $50(40.3)$ $76(61.3)$ $48(38.7)$ Preventing bad oral habits $50(6.2)$ $3.77 \pm 0.96$ $28(22.6)$ $29(23.4)$ $67(54.0)$ $56(45.2)$ $68(54.8)$ Subtotal $810(100.0)$ $4.33 \pm 0.72$ $39(31.5)$ $71(57.3)$ $14(11.3)$ $56(45.2)$ $68(54.8)$ Subtotal $810(100.0)$ $4.33 \pm 0.72$ $39(31.5)$ $71(57.3)$ $14(11.3)$	Dental dysplasia screening	32(6.0)	3.73±1.04	4(3.2)	21(16.9)	99(79.8)	6(4.8)	118(95.2)	
Subtotal532(100.0) $3.99\pm0.96$ $85(8.6)$ $442(44.6)$ $465(46.9)$ $530(53.4)$ $462(46.6)$ Oral health education0ral and body health $82(10.1)$ $4.06\pm0.76$ $21(16.9)$ $39(31.5)$ $64(51.6)$ $57(46.0)$ $67(54.0)$ Importance of childhood care $88(0.0)$ $4.62\pm0.52$ $47(37.9)$ $59(47.6)$ $18(14.5)$ $74(59.7)$ $50(40.3)$ Brushing methods $114(14.1)$ $4.92\pm0.27$ $22(17.7)$ $64(51.6)$ $38(30.6)$ $120(96.8)$ $4(3.2)$ Using oral care products $102(12.6)$ $4.65\pm0.48$ $29(23.4)$ $39(31.5)$ $56(45.2)$ $114(91.9)$ $10(8.1)$ Fluoride and tooth decay $86(10.6)$ $4.29\pm0.71$ $29(23.4)$ $60(48.4)$ $35(28.2)$ $82(66.1)$ $42(33.9)$ Eating and nutrition $68(8.4)$ $4.01\pm0.79$ $90(5.3)$ $43(34.7)$ $62(50.0)$ $82(66.1)$ $42(33.9)$ No smoking and drinking $60(7.4)$ $4.09\pm0.86$ $34(27.4)$ $40(32.3)$ $50(40.3)$ $76(61.3)$ $48(38.7)$ Preventing dental trauma $60(7.4)$ $4.99\pm0.85$ $17(13.7)$ $44(32.5)$ $63(50.8)$ $60(48.4)$ $64(51.6)$ Importance of dental check-ups $100(12.3)$ $4.92\pm0.27$ $39(31.5)$ $71(57.3)$ $14(11.3)$ $109(87.9)$ $15(12.1)$ Preventive dental care $79(13.0)$ $4.41\pm0.74$ $4.44\pm0.74$ $83(66.9)$ $14(11.3)$ $109(87.9)$ $15(12.1)$ Fluoride varnish $78(12.9)$ $4.44\pm0.74$ $4.44\pm0.74$	Caries activity test	50(9.4)	3.77±0.91	21(16.9)	45(36.3)	58(46.8)	49(39.5)	75(60.5)	
$\begin{array}{l c c c c c c c c c c c c c c c c c c c$	Subtotal	532(100.0)	3.99±0.96	85(8.6)	442(44.6)	465(46.9)	530(53.4)	462(46.6)	
Oral and body health $82(0.1)$ $4.06\pm0.76$ $21(16.9)$ $39(31.5)$ $64(51.6)$ $57(46.0)$ $67(54.0)$ Importance of childhood care $88(0.9)$ $4.62\pm0.52$ $47(37.9)$ $59(47.6)$ $18(14.5)$ $74(59.7)$ $50(40.3)$ Brushing methods $114(1.1)$ $4.92\pm0.27$ $22(17.7)$ $64(51.6)$ $38(30.6)$ $120(96.8)$ $4(3.2)$ Using oral care products $102(12.6)$ $4.65\pm0.48$ $29(23.4)$ $39(31.5)$ $56(45.2)$ $114(91.9)$ $10(8.1)$ Fluoride and tooth decay $86(10.6)$ $4.29\pm0.71$ $29(23.4)$ $60(48.4)$ $35(28.2)$ $82(66.1)$ $42(33.9)$ Raing and nutrition $68(8.4)$ $4.01\pm0.79$ $19(15.3)$ $43(34.7)$ $62(50.0)$ $82(66.1)$ $42(33.9)$ No smoking and drinking $60(7.4)$ $4.09\pm0.86$ $34(27.4)$ $40(32.3)$ $50(40.3)$ $76(61.3)$ $48(38.7)$ Preventing bad oral habits $50(6.2)$ $3.77\pm0.96$ $28(22.6)$ $29(23.4)$ $67(54.0)$ $56(45.2)$ $68(54.8)$ Importance of dental trauma $60(7.4)$ $3.98\pm0.85$ $17(13.7)$ $44(35.5)$ $63(50.8)$ $60(48.4)$ $64(51.6)$ Importance of dental care $810(100.0)$ $4.32\pm0.79$ $285(23.0)$ $488(39.4)$ $467(37.7)$ $777(62.7)$ $463(37.3)$ Preventive dental care $94(15.5)$ $4.44\pm0.74$ $4.34\pm0.74$ $4.44\pm0.74$ $83(66.9)$ $14(11.3)$ $109(87.9)$ $15(12.1)$ Fluoride varnish $78(12.9)$ $4.43\pm0.74$ $4.43\pm0.74$	Oral health education								
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Oral and body health	82(10.1)	$4.06 \pm 0.76$	21(16.9)	39(31.5)	64(51.6)	57(46.0)	67(54.0)	
Brushing methods $114(14.1)$ $4.92\pm0.27$ $22(17.7)$ $64(51.6)$ $38(30.6)$ $120(96.8)$ $4(3.2)$ Using oral care products $102(12.6)$ $4.65\pm0.48$ $29(23.4)$ $39(31.5)$ $56(45.2)$ $114(91.9)$ $10(8.1)$ Fluoride and tooth decay $86(10.6)$ $4.29\pm0.71$ $29(23.4)$ $60(48.4)$ $33(28.2)$ $82(6.1)$ $42(33.9)$ Eating and nutrition $68(8.4)$ $4.01\pm0.79$ $19(15.3)$ $43(34.7)$ $62(50.0)$ $82(66.1)$ $42(33.9)$ No smoking and drinking $60(7.4)$ $4.09\pm0.86$ $34(27.4)$ $40(32.3)$ $50(40.3)$ $76(61.3)$ $48(38.7)$ Preventing bad oral habits $50(6.2)$ $3.77\pm0.96$ $28(22.6)$ $29(23.4)$ $67(54.0)$ $56(45.2)$ $68(54.8)$ Preventing dental trauma $60(7.4)$ $3.98\pm0.85$ $17(13.7)$ $44(35.5)$ $63(50.8)$ $60(48.4)$ $64(51.6)$ Importance of dental check-ups $100(12.3)$ $4.92\pm0.27$ $39(31.5)$ $71(57.3)$ $14(11.3)$ $56(45.2)$ $68(54.8)$ Subtotal $810(10.0)$ $4.33\pm0.79$ $285(23.0)$ $488(39.4)$ $467(37.7)$ $777(62.7)$ $463(37.3)$ Preventive dental care $100(12.5)$ $4.44\pm0.74$ $4.44\pm0.74$ $83(66.5)$ $40(32.8)$ $118(95.2)$ $6(4.8)$ Fluoride varnish $78(12.9)$ $4.43\pm0.74$ $4.44\pm0.74$ $4(35.5)$ $40(32.8)$ $114(91.9)$ $10(8.1)$ Fluoride varnish $78(12.9)$ $4.43\pm0.74$ $4.43\pm0.74$ $44(35.5)$ $40(32.8)$ <t< td=""><td>Importance of childhood care</td><td>88(10.9)</td><td><math>4.62 \pm 0.52</math></td><td>47(37.9)</td><td>59(47.6)</td><td>18(14.5)</td><td>74(59.7)</td><td>50(40.3)</td></t<>	Importance of childhood care	88(10.9)	$4.62 \pm 0.52$	47(37.9)	59(47.6)	18(14.5)	74(59.7)	50(40.3)	
Using oral care products102(12.6) $4.65\pm0.48$ $29(23.4)$ $39(31.5)$ $56(45.2)$ $114(91.9)$ $10(8.1)$ Fluoride and tooth decay $86(10.6)$ $4.29\pm0.71$ $29(23.4)$ $60(48.4)$ $35(28.2)$ $82(66.1)$ $42(33.9)$ Eating and nutrition $68(8.4)$ $4.01\pm0.79$ $19(15.3)$ $43(34.7)$ $62(50.0)$ $82(66.1)$ $42(33.9)$ No smoking and drinking $60(7.4)$ $4.09\pm0.86$ $34(27.4)$ $40(32.3)$ $50(40.3)$ $76(61.3)$ $48(38.7)$ Preventing bad oral habits $50(6.2)$ $3.77\pm0.96$ $28(22.6)$ $29(23.4)$ $67(54.0)$ $56(45.2)$ $68(54.8)$ Preventing dental trauma $60(7.4)$ $3.98\pm0.85$ $17(13.7)$ $44(35.5)$ $63(50.8)$ $60(48.4)$ $64(51.6)$ Importance of dental check-ups $100(12.3)$ $4.92\pm0.27$ $39(31.5)$ $71(57.3)$ $14(11.3)$ $56(45.2)$ $68(54.8)$ Subtotal $810(100.0)$ $4.3\pm0.79$ $285(23.0)$ $488(39.4)$ $467(37.7)$ $777(62.7)$ $463(37.3)$ Preventive dental care $V$ $V$ $V$ $V$ $V$ $V$ $V$ $V$ Fluoride gel $79(13.0)$ $4.01\pm0.76$ $4.4(35.5)$ $40(32.8)$ $118(95.2)$ $6(4.8)$ Fluoride varnish $78(12.9)$ $4.43\pm0.74$ $4.43\pm0.74$ $44(35.5)$ $40(32.8)$ $114(91.9)$ $10(8.1)$ Molar sealant $106(17.5)$ $4.67\pm0.65$ $4.67\pm0.65$ $44(35.5)$ $40(32.8)$ $114(91.9)$ $10(8.1)$ Molar sealant </td <td>Brushing methods</td> <td>114(14.1)</td> <td><math>4.92 \pm 0.27</math></td> <td>22(17.7)</td> <td>64(51.6)</td> <td>38(30.6)</td> <td>120(96.8)</td> <td>4(3.2)</td>	Brushing methods	114(14.1)	$4.92 \pm 0.27$	22(17.7)	64(51.6)	38(30.6)	120(96.8)	4(3.2)	
Fluoride and tooth decay $86(10.6)$ $4.29\pm0.71$ $29(23.4)$ $60(48.4)$ $35(28.2)$ $82(66.1)$ $42(33.9)$ Fating and nutrition $68(8.4)$ $4.01\pm0.79$ $19(15.3)$ $43(34.7)$ $62(50.0)$ $82(66.1)$ $42(33.9)$ No smoking and drinking $60(7.4)$ $4.09\pm0.86$ $34(27.4)$ $40(32.3)$ $50(40.3)$ $76(61.3)$ $48(38.7)$ Preventing bad oral habits $50(6.2)$ $3.77\pm0.96$ $28(22.6)$ $29(23.4)$ $67(54.0)$ $56(45.2)$ $68(54.8)$ Preventing dental trauma $60(7.4)$ $3.98\pm0.85$ $17(13.7)$ $44(35.5)$ $63(50.8)$ $60(48.4)$ $64(51.6)$ Importance of dental check-ups $100(12.3)$ $4.92\pm0.27$ $39(31.5)$ $71(57.3)$ $14(11.3)$ $56(45.2)$ $68(54.8)$ Subtotal $810(100.0)$ $4.33\pm0.79$ $285(23.0)$ $488(39.4)$ $467(37.7)$ $777(62.7)$ $463(37.3)$ Preventive dental care $V$ $V$ $V$ $V$ $V$ $V$ $V$ $V$ Fluoride gel $79(13.0)$ $4.01\pm0.76$ $4.1(35.5)$ $40(32.8)$ $118(95.2)$ $6(4.8)$ Fluoride varnish $78(12.9)$ $4.43\pm0.74$ $4.43\pm0.74$ $44(35.5)$ $40(32.8)$ $114(91.9)$ $10(8.1)$ Molar sealant $106(17.5)$ $4.67\pm0.65$ $42(33.9)$ $46(37.1)$ $114(91.9)$ $10(8.1)$ Molar sealant $106(17.5)$ $4.67\pm0.65$ $42(33.9)$ $46(37.1)$ $114(91.9)$ $10(8.1)$ Molar sealant $70(12.7)$ $4.37\pm0.78$	Using oral care products	102(12.6)	4.65±0.48	29(23.4)	39(31.5)	56(45.2)	114(91.9)	10(8.1)	
Eating and nutrition $68(8.4)$ $4.01\pm0.79$ $19(15.3)$ $43(34.7)$ $62(50.0)$ $82(66.1)$ $42(33.9)$ No smoking and drinking $60(7.4)$ $4.09\pm0.86$ $34(27.4)$ $40(32.3)$ $50(40.3)$ $76(61.3)$ $48(38.7)$ Preventing bad oral habits $50(6.2)$ $3.77\pm0.96$ $28(22.6)$ $29(23.4)$ $67(54.0)$ $56(45.2)$ $68(54.8)$ Preventing dental trauma $60(7.4)$ $3.98\pm0.85$ $17(13.7)$ $44(35.5)$ $63(50.8)$ $60(48.4)$ $64(51.6)$ Importance of dental check-ups $100(12.3)$ $4.92\pm0.27$ $39(31.5)$ $71(57.3)$ $14(11.3)$ $56(45.2)$ $68(54.8)$ Subtotal $810(100.0)$ $4.33\pm0.79$ $285(23.0)$ $488(39.4)$ $467(37.7)$ $777(62.7)$ $463(37.3)$ Preventive dental care $Prophylaxis$ $94(15.5)$ $4.44\pm0.74$ $4.44\pm0.74$ $83(66.9)$ $14(11.3)$ $109(87.9)$ $15(12.1)$ Fluoride gel $79(13.0)$ $4.01\pm0.76$ $4.01\pm0.76$ $44(35.5)$ $40(32.8)$ $118(95.2)$ $6(4.8)$ Fluoride varnish $78(12.9)$ $4.33\pm0.74$ $44(35.5)$ $40(32.8)$ $114(91.9)$ $10(8.1)$ Molar sealant $106(17.5)$ $4.67\pm0.65$ $4.67\pm0.65$ $44(35.5)$ $61(49.2)$ $58(46.8)$ $66(53.2)$ Premolar sealant $78(12.9)$ $4.21\pm0.87$ $39(31.5)$ $61(49.2)$ $58(46.8)$ $66(53.2)$ Premolar sealant $78(12.9)$ $4.21\pm0.87$ $4.37\pm0.78$ $75(60.5)$ $36(29.0)$ $108(87.1)$ $16(12.9)$ <td>Fluoride and tooth decay</td> <td>86(10.6)</td> <td>4.29±0.71</td> <td>29(23.4)</td> <td>60(48.4)</td> <td>35(28.2)</td> <td>82(66.1)</td> <td>42(33.9)</td>	Fluoride and tooth decay	86(10.6)	4.29±0.71	29(23.4)	60(48.4)	35(28.2)	82(66.1)	42(33.9)	
No smoking and drinking $60(7.4)$ $4.09\pm0.86$ $34(27.4)$ $40(32.3)$ $50(40.3)$ $76(61.3)$ $48(38.7)$ Preventing bad oral habits $50(6.2)$ $3.77\pm0.96$ $28(22.6)$ $29(23.4)$ $67(54.0)$ $56(45.2)$ $68(54.8)$ Preventing dental trauma $60(7.4)$ $3.98\pm0.85$ $17(13.7)$ $44(35.5)$ $63(50.8)$ $60(48.4)$ $64(51.6)$ Importance of dental check-ups $100(12.3)$ $4.92\pm0.27$ $39(31.5)$ $71(57.3)$ $14(11.3)$ $56(45.2)$ $68(54.8)$ Subtotal $810(100.0)$ $4.33\pm0.79$ $285(23.0)$ $488(39.4)$ $467(37.7)$ $777(62.7)$ $463(37.3)$ Preventive dental care $V$ $V$ $V$ $V$ $V$ $V$ $V$ $V$ Fluoride gel $79(13.0)$ $4.44\pm0.74$ $4.44\pm0.74$ $83(66.9)$ $14(11.3)$ $109(87.9)$ $15(12.1)$ Fluoride varnish $78(12.9)$ $4.43\pm0.74$ $4.443\pm0.74$ $44(35.5)$ $40(32.8)$ $114(91.9)$ $10(8.1)$ Molar sealant $106(17.5)$ $4.67\pm0.65$ $4.67\pm0.65$ $44(35.5)$ $61(49.2)$ $58(46.8)$ $66(53.2)$ Premolar sealant $78(12.9)$ $4.21\pm0.87$ $39(31.5)$ $61(49.2)$ $58(46.8)$ $66(53.2)$ Premolar sealant $78(12.9)$ $4.21\pm0.87$ $39(31.5)$ $61(49.2)$ $58(46.8)$ $66(53.2)$ Premolar sealant $51(8.4)$ $3.65\pm1.07$ $3.65\pm1.07$ $39(35.5)$ $61(49.2)$ $58(46.8)$ $66(53.2)$ Scaling $77(12.7)$ $4.37\pm0.78$ </td <td>Eating and nutrition</td> <td>68(8.4)</td> <td>4.01±0.79</td> <td>19(15.3)</td> <td>43(34.7)</td> <td>62(50.0)</td> <td>82(66.1)</td> <td>42(33.9)</td>	Eating and nutrition	68(8.4)	4.01±0.79	19(15.3)	43(34.7)	62(50.0)	82(66.1)	42(33.9)	
Preventing bad oral habits $50(6.2)$ $3.77 \pm 0.96$ $28(22.6)$ $29(23.4)$ $67(54.0)$ $56(45.2)$ $68(54.8)$ Preventing dental trauma $60(7.4)$ $3.98 \pm 0.85$ $17(13.7)$ $44(35.5)$ $63(50.8)$ $60(48.4)$ $64(51.6)$ Importance of dental check-ups $100(12.3)$ $4.92 \pm 0.27$ $39(31.5)$ $71(57.3)$ $14(11.3)$ $56(45.2)$ $68(54.8)$ Subtotal $810(100.0)$ $4.33 \pm 0.79$ $285(23.0)$ $488(39.4)$ $467(37.7)$ $777(62.7)$ $463(37.3)$ Preventive dental care $Preventive dental carePreventive dental carePreventive dental carePreventive dental carePreventive dental careProphylaxis94(15.5)4.44 \pm 0.744.44 \pm 0.7483(66.9)14(11.3)109(87.9)15(12.1)Fluoride gel79(13.0)4.01 \pm 0.764.01 \pm 0.7644(35.5)40(32.8)118(95.2)6(4.8)Fluoride iontophoresis43(7.1)3.48 \pm 0.833.48 \pm 0.8342(33.9)46(37.1)114(91.9)10(8.1)Molar scalant106(17.5)4.67 \pm 0.654.67 \pm 0.6544(35.5)61(49.2)58(46.8)66(53.2)Premolar scalant78(12.9)4.21 \pm 0.8739(31.5)61(49.2)58(46.8)66(53.2)Premolar scalant51(8.4)3.65 \pm 1.073.65 \pm 1.0739(35.5)61(49.2)58(46.8)66(53.2)Scaling77(12.7)4.37 \pm 0.784.37 \pm 0.7875(60.5)36(29.0)$	No smoking and drinking	60(7.4)	4.09±0.86	34(27.4)	40(32.3)	50(40.3)	76(61.3)	48(38.7)	
Preventing dental trauma $607.4$ $3.98 \pm 0.85$ $17(13.7)$ $44(35.5)$ $63(50.8)$ $60(48.4)$ $64(51.6)$ Importance of dental check-ups $100(12.3)$ $4.92 \pm 0.27$ $39(31.5)$ $71(57.3)$ $14(11.3)$ $56(45.2)$ $68(54.8)$ Subtotal $810(100.0)$ $4.33 \pm 0.79$ $285(23.0)$ $488(39.4)$ $467(37.7)$ $777(62.7)$ $463(37.3)$ Preventive dental care $Preventive dental carePreventive dental carePreventive dental carePreventive dental carePreventive dental careProphylaxis94(15.5)4.44 \pm 0.744.44 \pm 0.7483(66.9)14(11.3)109(87.9)15(12.1)Fluoride gel79(13.0)4.01 \pm 0.764.01 \pm 0.7644(35.5)40(32.8)118(95.2)6(4.8)Fluoride varnish78(12.9)4.43 \pm 0.744.43 \pm 0.7444(35.5)40(32.8)114(91.9)10(8.1)Molar sealant106(17.5)4.67 \pm 0.654.67 \pm 0.6544(35.5)61(49.2)58(46.8)66(53.2)Premolar sealant78(12.9)4.21 \pm 0.8739(31.5)61(49.2)58(46.8)66(53.2)Premolar sealant51(8.4)3.65 \pm 1.073.65 \pm 1.0739(35.5)61(49.2)58(46.8)66(53.2)Subtotal60(00.0)4.11 \pm 0.894.11 \pm 0.89410(4.1.3)359(36.2)739(74.5)253(25.5)Dental treatment**Premenolar sealant606(100.0)4.11 \pm 0.89410(32.3)74($	Preventing bad oral habits	50(6.2)	3.77±0.96	28(22.6)	29(23.4)	67(54.0)	56(45.2)	68(54.8)	
Importance of dental check-ups100(12.3) $4.92\pm0.27$ $39(31.5)$ $71(57.3)$ $14(11.3)$ $56(45.2)$ $68(54.8)$ Subtotal $810(100.0)$ $4.33\pm0.79$ $285(23.0)$ $488(39.4)$ $467(37.7)$ $777(62.7)$ $463(37.3)$ Preventive dental care $V$ $V$ $V$ $V$ $V$ $V$ $V$ $V$ $V$ Fluoride gel $79(13.0)$ $4.01\pm0.76$ $4.04\pm0.74$ $83(66.9)$ $14(11.3)$ $109(87.9)$ $15(12.1)$ Fluoride varnish $78(12.9)$ $4.43\pm0.74$ $4.44\pm0.74$ $44(35.5)$ $40(32.8)$ $118(95.2)$ $6(4.8)$ Fluoride iontophoresis $43(7.1)$ $3.48\pm0.83$ $3.48\pm0.83$ $42(33.9)$ $46(37.1)$ $114(91.9)$ $10(8.1)$ Molar sealant $106(17.5)$ $4.67\pm0.65$ $4.67\pm0.65$ $44(35.5)$ $61(49.2)$ $58(46.8)$ $66(53.2)$ Premolar sealant $78(12.9)$ $4.21\pm0.87$ $39(31.5)$ $61(49.2)$ $58(46.8)$ $66(53.2)$ Primary molar sealant $51(8.4)$ $3.65\pm1.07$ $39(35.5)$ $61(49.2)$ $58(46.8)$ $66(53.2)$ Scaling $77(12.7)$ $4.37\pm0.78$ $4.37\pm0.78$ $75(60.5)$ $36(29.0)$ $108(87.1)$ $16(12.9)$ Subtotal $606(100.0)$ $4.11\pm0.89$ $4.11\pm0.89$ $410(41.3)$ $359(36.2)$ $739(74.5)$ $253(25.5)$ Dental treatment** $V$ $V$ $V$ $42(7.2)$ $3.69\pm1.23$ $12(9.7)$ $44(35.5)$ $68(54.8)$ $-$ Subtotal $606(100.0)$ $4.11\pm0.89$ <	Preventing dental trauma	60(7.4)	$3.98 \pm 0.85$	17(13.7)	44(35.5)	63(50.8)	60(48.4)	64(51.6)	
SubtotalStatuto function of the second	Importance of dental check-ups	100(12.3)	$4.92 \pm 0.27$	39(31.5)	71(57.3)	14(11.3)	56(45.2)	68(54.8)	
Interfact of the form of	Subtotal	810(100.0)	$4.33 \pm 0.79$	285(23.0)	488(39.4)	467(37.7)	777(62.7)	463(37.3)	
Prophylaxis94(15.5) $4.44\pm0.74$ $4.44\pm0.74$ $83(66.9)$ $14(11.3)$ $109(87.9)$ $15(12.1)$ Fluoride gel79(13.0) $4.01\pm0.76$ $4.01\pm0.76$ $44(35.5)$ $40(32.8)$ $118(95.2)$ $6(4.8)$ Fluoride varnish78(12.9) $4.43\pm0.74$ $4.43\pm0.74$ $44(35.5)$ $40(32.8)$ $114(91.9)$ $10(8.1)$ Fluoride iontophoresis $43(7.1)$ $3.48\pm0.83$ $3.48\pm0.83$ $42(33.9)$ $46(37.1)$ $114(91.9)$ $10(8.1)$ Molar sealant $106(17.5)$ $4.67\pm0.65$ $4.67\pm0.65$ $44(35.5)$ $61(49.2)$ $58(46.8)$ $66(53.2)$ Premolar sealant $78(12.9)$ $4.21\pm0.87$ $39(31.5)$ $61(49.2)$ $58(46.8)$ $66(53.2)$ Primary molar sealant $51(8.4)$ $3.65\pm1.07$ $3.65\pm1.07$ $39(35.5)$ $61(49.2)$ $58(46.8)$ $66(53.2)$ Scaling $77(12.7)$ $4.37\pm0.78$ $4.37\pm0.78$ $75(60.5)$ $36(29.0)$ $108(87.1)$ $16(12.9)$ Subtotal $606(100.0)$ $4.11\pm0.89$ $4.11\pm0.89$ $410(41.3)$ $359(36.2)$ $739(74.5)$ $253(25.5)$ Dental treatment**Amalgamation filling $24(4.1)$ $2.90\pm1.30$ $10(8.1)$ $40(32.3)$ $74(59.7)$ $ -$ Glass ionomer filling $100(17.0)$ $3.92\pm0.75$ $12(9.7)$ $44(35.5)$ $68(54.8)$ $ -$ Resin filling (self-curing) $42(7.2)$ $3.69\pm1.23$ $12(9.7)$ $45(36.3)$ $67(54.0)$ $ -$	Preventive dental care								
Fluoride gel79(13.0) $4.01\pm0.76$ $4.01\pm0.76$ $4.4(35.5)$ $40(32.8)$ $118(95.2)$ $6(4.8)$ Fluoride varnish78(12.9) $4.43\pm0.74$ $4.43\pm0.74$ $44(35.5)$ $40(32.8)$ $114(91.9)$ $10(8.1)$ Fluoride iontophoresis $43(7.1)$ $3.48\pm0.83$ $3.48\pm0.83$ $42(33.9)$ $46(37.1)$ $114(91.9)$ $10(8.1)$ Molar sealant $106(17.5)$ $4.67\pm0.65$ $4.67\pm0.65$ $44(35.5)$ $61(49.2)$ $58(46.8)$ $66(53.2)$ Premolar sealant $78(12.9)$ $4.21\pm0.87$ $3.9(31.5)$ $61(49.2)$ $58(46.8)$ $66(53.2)$ Premolar sealant $78(12.9)$ $4.21\pm0.87$ $3.9(31.5)$ $61(49.2)$ $58(46.8)$ $66(53.2)$ Scaling $77(12.7)$ $4.37\pm0.78$ $4.37\pm0.78$ $75(60.5)$ $36(29.0)$ $108(87.1)$ $16(12.9)$ Subtotal $606(100.0)$ $4.11\pm0.89$ $4.11\pm0.89$ $410(41.3)$ $359(36.2)$ $739(74.5)$ $253(25.5)$ Dental treatment <sup>**</sup> $42(7.2)$ $3.69\pm1.23$ $12(9.7)$ $44(35.5)$ $68(54.8)$ $ -$ Resin filling (self-curing) $42(7.2)$ $3.69\pm1.23$ $12(9.7)$ $45(36.3)$ $67(54.0)$ $ -$	Prophylaxis	94(15.5)	4.44±0.74	4.44±0.74	83(66.9)	14(11.3)	109(87.9)	15(12.1)	
Fluoride varnish78(12.9) $4.43\pm0.74$ $4.43\pm0.74$ $4.43\pm0.74$ $4.4(35.5)$ $40(32.8)$ $114(91.9)$ $10(8.1)$ Fluoride iontophoresis $43(7.1)$ $3.48\pm0.83$ $3.48\pm0.83$ $42(33.9)$ $46(37.1)$ $114(91.9)$ $10(8.1)$ Molar sealant $106(17.5)$ $4.67\pm0.65$ $4.67\pm0.65$ $44(35.5)$ $61(49.2)$ $58(46.8)$ $66(53.2)$ Premolar sealant $78(12.9)$ $4.21\pm0.87$ $4.21\pm0.87$ $39(31.5)$ $61(49.2)$ $60(48.4)$ $64(51.6)$ Primary molar sealant $51(8.4)$ $3.65\pm1.07$ $3.65\pm1.07$ $39(35.5)$ $61(49.2)$ $58(46.8)$ $66(53.2)$ Scaling $77(12.7)$ $4.37\pm0.78$ $4.37\pm0.78$ $75(60.5)$ $36(29.0)$ $108(87.1)$ $16(12.9)$ Subtotal $606(100.0)$ $4.11\pm0.89$ $4.11\pm0.89$ $410(41.3)$ $359(36.2)$ $739(74.5)$ $253(25.5)$ Dental treatment <sup>#*</sup> $42(7.2)$ $3.69\pm1.23$ $12(9.7)$ $44(35.5)$ $68(54.8)$ $ -$ Resin filling (self-curing) $42(7.2)$ $3.69\pm1.23$ $12(9.7)$ $45(36.3)$ $67(54.0)$ $ -$	Fluoride gel	79(13.0)	$4.01 \pm 0.76$	$4.01 \pm 0.76$	44(35.5)	40(32.8)	118(95.2)	6(4.8)	
Fluoride iontophoresis $43(7.1)$ $3.48\pm0.83$ $3.48\pm0.83$ $42(33.9)$ $46(37.1)$ $114(91.9)$ $10(8.1)$ Molar sealant $106(17.5)$ $4.67\pm0.65$ $4.67\pm0.65$ $44(35.5)$ $61(49.2)$ $58(46.8)$ $66(53.2)$ Premolar sealant $78(12.9)$ $4.21\pm0.87$ $4.21\pm0.87$ $39(31.5)$ $61(49.2)$ $60(48.4)$ $64(51.6)$ Primary molar sealant $51(8.4)$ $3.65\pm1.07$ $3.65\pm1.07$ $39(35.5)$ $61(49.2)$ $58(46.8)$ $66(53.2)$ Scaling $77(12.7)$ $4.37\pm0.78$ $4.37\pm0.78$ $75(60.5)$ $36(29.0)$ $108(87.1)$ $16(12.9)$ Subtotal $606(100.0)$ $4.11\pm0.89$ $4.11\pm0.89$ $410(41.3)$ $359(36.2)$ $739(74.5)$ $253(25.5)$ Dental treatment <sup>#</sup> $42(4.1)$ $2.90\pm1.30$ $10(8.1)$ $40(32.3)$ $74(59.7)$ $ -$ Glass ionomer filling $100(17.0)$ $3.92\pm0.75$ $12(9.7)$ $44(35.5)$ $68(54.8)$ $ -$ Resin filling (self-curing) $42(7.2)$ $3.69\pm1.23$ $12(9.7)$ $45(36.3)$ $67(54.0)$ $ -$	Fluoride varnish	78(12.9)	$4.43 \pm 0.74$	$4.43 \pm 0.74$	44(35.5)	40(32.8)	114(91.9)	10(8.1)	
Molar sealant106(17.5) $4.67\pm0.65$ $4.67\pm0.65$ $44(35.5)$ $61(49.2)$ $58(46.8)$ $66(53.2)$ Premolar sealant78(12.9) $4.21\pm0.87$ $4.21\pm0.87$ $39(31.5)$ $61(49.2)$ $60(48.4)$ $64(51.6)$ Primary molar sealant51(8.4) $3.65\pm1.07$ $3.65\pm1.07$ $39(35.5)$ $61(49.2)$ $58(46.8)$ $66(53.2)$ Scaling $77(12.7)$ $4.37\pm0.78$ $4.37\pm0.78$ $75(60.5)$ $36(29.0)$ $108(87.1)$ $16(12.9)$ Subtotal $606(100.0)$ $4.11\pm0.89$ $4.11\pm0.89$ $410(41.3)$ $359(36.2)$ $739(74.5)$ $253(25.5)$ Dental treatment <sup>66</sup> $     -$ Glass ionomer filling $100(17.0)$ $3.92\pm0.75$ $12(9.7)$ $44(35.5)$ $68(54.8)$ $ -$ Resin filling (self-curing) $42(7.2)$ $3.69\pm1.23$ $12(9.7)$ $45(36.3)$ $67(54.0)$ $ -$	Fluoride iontophoresis	43(7.1)	$3.48 \pm 0.83$	$3.48 \pm 0.83$	42(33.9)	46(37.1)	114(91.9)	10(8.1)	
Premolar sealant78(12.9) $4.21\pm0.87$ $4.21\pm0.87$ $39(31.5)$ $61(49.2)$ $60(48.4)$ $64(51.6)$ Primary molar sealant $51(8.4)$ $3.65\pm1.07$ $3.65\pm1.07$ $39(35.5)$ $61(49.2)$ $58(46.8)$ $66(53.2)$ Scaling $77(12.7)$ $4.37\pm0.78$ $4.37\pm0.78$ $75(60.5)$ $36(29.0)$ $108(87.1)$ $16(12.9)$ Subtotal $606(100.0)$ $4.11\pm0.89$ $4.11\pm0.89$ $410(41.3)$ $359(36.2)$ $739(74.5)$ $253(25.5)$ Dental treatment <sup>**</sup> $     -$ Glass ionomer filling $100(17.0)$ $3.92\pm0.75$ $12(9.7)$ $44(35.5)$ $68(54.8)$ $ -$ Resin filling (self-curing) $42(7.2)$ $3.69\pm1.23$ $12(9.7)$ $45(36.3)$ $67(54.0)$ $ -$	Molar sealant	106(17.5)	$4.67 \pm 0.65$	$4.67 \pm 0.65$	44(35.5)	61(49.2)	58(46.8)	66(53.2)	
Primary molar sealant $51(8.4)$ $3.65\pm1.07$ $3.65\pm1.07$ $39(35.5)$ $61(49.2)$ $58(46.8)$ $66(53.2)$ Scaling $77(12.7)$ $4.37\pm0.78$ $4.37\pm0.78$ $75(60.5)$ $36(29.0)$ $108(87.1)$ $16(12.9)$ Subtotal $606(100.0)$ $4.11\pm0.89$ $4.11\pm0.89$ $410(41.3)$ $359(36.2)$ $739(74.5)$ $253(25.5)$ Dental treatment* $411\pm0.89$ $410(41.3)$ $359(36.2)$ $739(74.5)$ $253(25.5)$ Dental treatment* $411\pm0.89$ $410(42.3)$ $74(59.7)$ Glass ionomer filling $100(17.0)$ $3.92\pm0.75$ $12(9.7)$ $44(35.5)$ $68(54.8)$ Resin filling (self-curing) $42(7.2)$ $3.69\pm1.23$ $12(9.7)$ $45(36.3)$ $67(54.0)$	Premolar sealant	78(12.9)	$4.21 \pm 0.87$	$4.21 \pm 0.87$	39(31.5)	61(49.2)	60(48.4)	64(51.6)	
Scaling $77(12.7)$ $4.37\pm0.78$ $4.37\pm0.78$ $75(60.5)$ $36(29.0)$ $108(87.1)$ $16(12.9)$ Subtotal $606(100.0)$ $4.11\pm0.89$ $4.11\pm0.89$ $410(41.3)$ $359(36.2)$ $739(74.5)$ $253(25.5)$ Dental treatment**Amalgamation filling $24(4.1)$ $2.90\pm1.30$ $10(8.1)$ $40(32.3)$ $74(59.7)$ Glass ionomer filling $100(17.0)$ $3.92\pm0.75$ $12(9.7)$ $44(35.5)$ $68(54.8)$ Resin filling (self-curing) $42(7.2)$ $3.69\pm1.23$ $12(9.7)$ $45(36.3)$ $67(54.0)$	Primary molar sealant	51(8.4)	$3.65 \pm 1.07$	$3.65 \pm 1.07$	39(35.5)	61(49.2)	58(46.8)	66(53.2)	
Subtotal $606(100.0)$ $4.11\pm0.89$ $4.11\pm0.89$ $410(41.3)$ $359(36.2)$ $739(74.5)$ $253(25.5)$ Dental treatment**Amalgamation filling $24(4.1)$ $2.90\pm1.30$ $10(8.1)$ $40(32.3)$ $74(59.7)$ Glass ionomer filling $100(17.0)$ $3.92\pm0.75$ $12(9.7)$ $44(35.5)$ $68(54.8)$ Resin filling (self-curing) $42(7.2)$ $3.69\pm1.23$ $12(9.7)$ $45(36.3)$ $67(54.0)$	Scaling	77(12.7)	$4.37 \pm 0.78$	$4.37 \pm 0.78$	75(60.5)	36(29.0)	108(87.1)	16(12.9)	
Dental treatment <sup>**</sup> Amalgamation filling $24(4.1)$ $2.90\pm1.30$ $10(8.1)$ $40(32.3)$ $74(59.7)$ -       -         Glass ionomer filling $100(17.0)$ $3.92\pm0.75$ $12(9.7)$ $44(35.5)$ $68(54.8)$ -       -         Resin filling (self-curing) $42(7.2)$ $3.69\pm1.23$ $12(9.7)$ $45(36.3)$ $67(54.0)$ -       -	Subtotal	606(100.0)	$411\pm0.89$	$411\pm0.89$	410(41.3)	359(36.2)	739(74.5)	253(25.5)	
Amalgamation filling       24(4.1)       2.90±1.30       10(8.1)       40(32.3)       74(59.7)       -       -         Glass ionomer filling       100(17.0)       3.92±0.75       12(9.7)       44(35.5)       68(54.8)       -       -         Resin filling (self-curing)       42(7.2)       3.69±1.23       12(9.7)       45(36.3)       67(54.0)       -       -	Dental treatment <sup>**</sup>	000(100.0)			110(1110)	00)(00.2)	100(1110)	200(20:0)	
Glass ionomer filling $100(17.0)$ $3.92\pm0.75$ $12(9.7)$ $44(35.5)$ $68(54.8)$ Resin filling (self-curing) $42(7.2)$ $3.69\pm1.23$ $12(9.7)$ $45(36.3)$ $67(54.0)$ -	Amalgamation filling	24(41)	$290 \pm 130$	10(8.1)	40(32.3)	74(59.7)	-	-	
Resin filling (self-curing) $42(7.2)$ $3.69\pm1.23$ $12(9.7)$ $45(36.3)$ $67(54.0)$	Glass jonomer filling	100(17.0)	$3.92\pm0.75$	12(9.7)	44(35.5)	68(54.8)	-	-	
12(1,2) $12(1,2)$ $12(1,1)$ $10(0,0)$ $01(0,0)$	Besin filling (self-curing)	42(7.2)	$3.69 \pm 1.73$	12(9.7)	45(36.3)	67(54.0)	-	-	
Resin filling (light-curing) $116(19.8) 4.66\pm0.60 16(12.9) 57(46.0) 51(41.1)$	Resin filling (light-curing)	116(19.8)	$466\pm0.60$	16(12.9)	57(46.0)	51(41.1)	-	_	
Finded on the second s	Endodontics	86(14.7)	$4.00 \pm 0.00$	8(6.5)	50(46 0)	66(53.2)	-	_	
Tooth extraction $91(155)$ $4.40\pm0.77$ $12(9.7)$ $39(31.5)$ $61(49.2)$	Tooth extraction	91(15 5)	$4.40\pm0.70$	12(9.7)	39(31.5)	61(49.2)	-	_	
Space maintaioner $73(12.4)$ $4.31\pm0.69$ $26(21.0)$ $37(29.8)$ $61(40.2)$	Space maintaioner	73(12.4)	$4.31\pm0.69$	26(21.0)	37(29.8)	61(49.2)	_	_	
Gingivectomy for equation disorder $55(9.4)$ $3.85\pm1.02$ $21(16.9)$ $AA(25.5)$ $50(A7.6)$	Ginoivectomy for eruption disorder	55(0 1)	$385 \pm 100$	20(21.0)	1/(25.5) 1/(25.5)	59(17.6)	_	_	
Subtotal $587(100.0)$ $4.02+1.06$ $117(11.8)$ $256(25.0)$ $510(52.2)$ -	Subtotal	587(100 0)	4.02+1.02	21(10.9) 117(11 Q)	356(25.0)	510(52.3)	_	_	
Total $2535(100.0)$ $4.12\pm0.93$ $710(100.0)$ $1.606(100.0)$ $1.910(100.0)$ $2.046(100.0)$ $1.179(100.0)$	Total	2 535(100.0)	4 12+0 02	710(100.0)	1 696(100.0)	1 810(100 0)	2 046(100 0)	1 178(100 0)	
*multiple responses ** not the work of a dental hydrenist by law	*multiple responses ** not the work of a	dental hygienist hy law	7.12-0.73	/ 10/100.0)	1,070(100.0)	1,010(100:0)	2,0T0\100.0/	1,170(100.0)	

**Table 2** Essential services importance delivery frequency and providers of program

## 3. Differences in the importance of subprogram by general characteristics

There were statistically significant differences in oral examination, education, prevention and treatment according to the general characteristics of the study population <Table 3>. Females rated education (p<0.01), prevention (p<0.05), and treatment (p<0.05) higher than males, and those over 30 years of age rated education (p<0.01), prevention (p<0.01), and treatment (p<0.01) higher than

those under 30 years of age, and the differences by region were not statistically significant. There were statistically significant differences in examination (p<0.01), education (p<0.01), prevention (p<0.01), and treatment (p<0.01) by occupation. Students rated the importance of examination, education and prevention in the program higher than dental hygienists and dentists. The importance of treatment was also higher among students.

Table 3. Differences in the importance according to the general characteristics					Unit: Me	ean±SD			
Characteristics	N(%)	Examination	$p^{*}$	Education	$p^{*}$	Prevention	$p^{*}$	Treatment	$p^{*}$
Gender <sup>†</sup>									
Female	96(77.4)	$4.01 \pm 0.62$	0.451	$4.38 \pm 0.45$	0.008	$4.23 \pm 0.45$	0.010	$4.09 \pm 0.68$	0.041
Male	28(22.6)	$3.91 \pm 0.54$		$4.14 \pm 0.39$		$3.81 \pm 0.76$		$3.82 \pm 0.56$	
Age <sup>†</sup> (yr)									
<30	73(58.9)	$4.05 \pm 0.69$	0.184	$4.44 \pm 0.48$	< 0.001	4.27±0.47	0.001	$4.15 \pm 0.73$	0.008
$\geq 30$	51(41.1)	$3.91 \pm 0.45$		$4.17 \pm 0.34$		$3.94 \pm 0.62$		3.86±0.49	
Region <sup>†</sup>									
Suncheon	80(64.5)	$3.98 {\pm} 0.60$	0.823	$4.34 \pm 0.46$	0.765	$4.08 \pm 0.57$	0.164	$4.01 \pm 0.66$	0.622
Other	44(35.5)	$4.01 \pm 0.62$		$4.31 \pm 0.43$		$4.23 \pm 0.47$		$4.07 \pm 0.67$	
Occupations <sup>‡</sup>									
Dental hygienist	45(36.3)	$3.70 \pm 0.49^{a}$	< 0.001	$4.18 \pm 0.38^{a}$	< 0.001	$4.08 \pm 0.38^{a}$	< 0.001	$3.75 \pm 0.61^{a}$	< 0.001
Dentist	36(29.0)	$3.92{\pm}0.51^{\rm ab}$		$4.14 \pm 0.36^{ab}$		$3.81 \pm 0.69^{ab}$		$3.80 {\pm} 0.49^{\mathrm{ab}}$	
Student	43(34.7)	$4.35 \pm 0.62^{\circ}$		$4.65 \pm 0.41^{\circ}$		$4.46 \pm 0.43^{\circ}$		$4.52 \pm 0.55^{\circ}$	
Total	124(100.0)	$3.99 \pm 0.96$		4.33±0.79		$4.11 \pm 0.89$		$4.02 \pm 1.06$	
*1	4 +	ANTOTZA							

Table 3	Differences in	the importance	according to the	general characteristics	
Table 5.	Differences in	the importance			

by independent t-test or one way ANOVA

<sup>abo</sup>The same characters was not signicant by Scheffé's multiple comparison.

#### 6. Correlation between variables in the importance

<Table 4> shows the correlation between the importance of oral examination, education, prevention, and treatment. As the importance of examination increased, the importance of education ( $\alpha$ =0.826), prevention ( $\alpha$ =0.606), and treatment ( $\alpha$ =0.714) also increased (p < 0.01). In particular, there was a high correlation between the importance of examination and that of education. The importance of oral health education also increased, as did has the intensity of prevention ( $\alpha$ =0.536), treatment ( $\alpha$ =0.611), and oral examinations( $\alpha$ =0.826, p<0.01). That of prevention increased, as did that of the examination ( $\alpha$ =0.606), the education ( $\alpha$ =0.536), and the treatment ( $\alpha$ =0.740, p<0.01). In addition, the higher that of the treatment, the higher that of the examination ( $\alpha$ =0.714), the the education ( $\alpha$ =0.611), and the treatment ( $\alpha$ =0.740, *p*<0.01).

<Table 5> shows the correlation between essential service and importance of oral examination, education, preventive dental care, and dental treatment. Higher importance was associated with higher need ( $\alpha$ =0.447, p<0.001).

Table 1. conclution between valuates in importance						
Variables	Examination	Education	Prevention	Treatment		
Examination	1.000					
Education	$0.826^{*}$	1.000				
Prevention	$0.606^{*}$	$0.536^{*}$	1.000			
Treatment	0.714*	$0.611^{*}$	0.740*	1.000		

**Table 4** Correlation between variables in importance

p<0.01, by pearson's correlation coefficient

Table 5. Correlation between essential service	and importance
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Variables	Essential service	Importance
Essential service	1.000	
Importance	0.447*	1.000

p < 0.001, by pearson's correlation coefficient

### Discussion

The researcher identified the role and needs of dental hygienists in the program which provides primary dental care for children. In terms of service needs, oral examinations and panoramic radiographs were considered essential, oral health education should include education on brushing, the use of oral products, and the importance of regular examinations, and preventive care such as molar sealants and prophylaxis was needed. There was also a high need for light-curing resins and GI fillings in dental care. Choi [15] also reported that examinations(history taking and oral inspection), and panoramic radiographs were the most needed for examination, and that brushing and education on childhood oral health care were important. For prophylaxis, molar sealants and oral prophylaxis were indicated. Treatment included composite resin fillings and tooth extractions.

According to the Standard Service Manual for Family Dentists for Children [8], the oral examination includes history taking and inspection, caries risk assessment (biological predisposing factors, prophylactic factors, and clinical observation), and plaque scoring (PHP index) as mandatory services, and panoramic photography as an optional service if necessary. Mandatory education included the importance of childhood oral health care, the relationship between oral and systemic health, brushing and flossing, fluoride application, diet and nutrition, and optional education service included the use of oral care products. Mandatory preventive services included prophylaxis and fluoride varnish, and sealants were optional. Treatment services such as fillings, endodontic treatment, extractions and space maintainers were also optional. The policy evaluation of dentist system for Seoul's student and children [3] also reported that education on dietary habits, smoking cessation and temperance was provided somewhat less than education on oral hygiene management such as brushing and flossing and flooride use.

In terms of examination, oral examinations and panoramic radiographs were considered important, but bitewing radiographs and screening for dysplasia were not considered relatively unimportant. In education, brushing techniques and regular check-ups were considered important, but bad oral habits and prevention of dental trauma were relatively unimportant. The most important preventive treatments were molar sealants and oral prophylaxis, while fluoride iontophoresis and primary molar sealants were less important. light-curing resin fillings and root canal treatment were important, while amalgam fillings and self-curing resin fillings were not. Choi [15] reported similar importance of oral examinations, education, preventive care, and treatment services. The policy evaluation of dentist system for Seoul's student and children [3] emphasised the importance of oral health education, including tooth brushing, and stated that for the system to be successful, it is very important that not only children but also their parents have oral health knowledge, awareness of prevention, and especially that adults' oral health. The importance and effectiveness of smoking cessation and sobriety was also highlighted, as it was only offered to less than half of the students screened. In the United States, Medicaid and the Children's Health Insurance Programme (CHIP) provide routine oral examinations and radiographs, as well as preventive, educational, filling, endodontic, periodontal, prosthodontic, and oral and maxillofacial surgery services; in Canada, the healthy smile ontario program provides examination, diagnosis, prevention, and treatment as core services, preventive services, and emergency and essential services [16,17].

The frequency of follow-up was 6 months for education and prevention and 12 months for treatment, with education and prevention requiring more frequent follow-up than treatment. Choi [15] reported a 6-month cycle for oral examination, education, and prevention, and did not investigated treatment services; however, she reported that a 12-month cycle was appropriate for panoramic photography and malocclusion screening in oral examination, and for education on the relationship between oral and systemic health, smoking cessation and sobriety, prevention of dental trauma, and prophylaxis for dental calculus removal. The standard service manual for family dentists for children [8] and the American Academy of Pediatric Dentistry [16] recommended a 6 month follow-up interval, with three months for high-risk groups.

The Seoul Metropolitan Government provides oral examinations, education, and preventive services to participating students once a year at a cost of 40,000 won per student through a private dental clinic that has signed a business agreement with the Korean

Dental Association. France requires mandatory annual oral examinations and free dental treatment within nine months of the examination [18]. In the United States, the timeframe varies from state to state, but in Washington state, major examinations and preventive care are recommended three to four times a year, with those eligible are expected to pay around \$7 to \$20. Canada offers free annual examination, prevention, and treatment services if those meet household income guidelines [16,19].

Radiographs and plaque assay were considered appropriate by dental hygienists, while dental dysplasia screening, malocclusion checks, oral examination, and caries activity test appropriate by dentists. Dental hygienists were more likely to provide oral health education and preventive care. According to the Act and its the implementing legislation [20], dental hygienists are required to ligate and remove orthodontic wire, apply fluoride, take diagnostic radiographs, perform temporary fillings, cement and remove temporary attachments, perform scaling and oral prophylaxis, take dental impressions, and provide other dental and oral disease prevention and hygiene care. According to the standard service manual for family dentists for children [8], professional care should be provided by a dental hygienist for education service and a dentist or dental hygienist for preventive services.

There were statistically significant differences in the importance of screening, education, prevention, and treatment services based on the general characteristics of the study population. The importance of education, prevention, and treatment services was higher for female than for male and for those aged 30 years and over than for those aged younger than 30 years, with no statistically significant differences by region. Dental hygiene students were also more likely to use examination, education, prevention, and treatment services than dental hygienists and dentists. This difference may be due to the fact that dental hygiene students feeling that what they learned in law or in school was different from their experience in practice. Previous studies [21,22] have shown that dental hygiene students perceive dentists that dentists perform different task or that the division of labour is not clear. They also have different perceptions of the detailed scope of dental hygienists' duties, including oral examination, education, asisting, and administration and management.

Oral examinations were positively correlated with education, prevention, and treatment services. In particular, examinations were highly correlated with education and treatment, and prevention and treatment, so it is necessary to follow up examinations regularly with education, prevention, or treatment services. Participation in the study was also positively correlated with the importance of the essential services of a child's family dentistry program. A study by Shun and Choi [23] found that people of all ages who have not had an oral examination are at high risk of oral disease and have high treatment costs, so ongoing care and screening are important for early caries and prevention. To prevent and care a early childhood caries (ECC), infants and young children should receive oral examinations, and lifelong health care strategies and early screening are needed [24].

This study focused on dental hygienists and dentists, who are essential staff in a children's family dentistry program, and also on students who are future dental hygienists. It is useful to analyse the needs of the program by investigating the essential services to be provided, their importance, period of service, and who should be the appropriate providers, so that it can be used as a basic data for the development and operation of future programs. However, a limitation of the study was that it was not generalisable as it was carried out in a small geographical area. Further research is needed to study the demand and need for the program by including members of the pilot Children's Family Dentistry Program.

## Conclusions

Researchers have identified the following essential service needed in a children's family dentistry program, their importance, period of service, and the role of the dental hygienist.

1. Oral examination and panoramic radiography are an essential part of the examination. Oral health education should include brushing, use of oral products, and the importance of regular examination, preventive service such as molar sealants and prophylaxis are necessary. And treatments such as light-curing resin and GI filling are essential. 2. The frequency of assessment is 6 months for education and prevention and 12 months for treatment, with education and prevention being more frequent than treatment.

3. Dental hygiene students feel that examination, education, prevention, and treatment services are more important than dental hygienists and dentists.

4. Oral examinations are highly correlated with education and treatment, and prevention and treatment, and are positively correlated with the essential services and thier importance.

Children's family dentistry program should provide services that are considered necessary and important. Examination and education should be more frequent than treatment, and the importance of the program should be emphasised not only to dental hygiene students but also to the dental hygienists and dentists who are integral to the program.

## Acknowledgements

This study was supported by the Sahmyook Health University research grants in 2023. The funders had no role in the study design, data collection and analysis, or preparation of the manuscript.

# **Conflicts of Interest**

The author declared no conflicts of interest.

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# 아동 치과주치의 프로그램의 필요도와 치과위생사의 역할

## 초록

연구목적: 연구자는 아동 치과 주치의 프로그램에서 필수 서비스와 중요도, 검진 주기, 치과위생사의 역할을 알아보고자 한다. 연구방법: 최종 연구대상자는 치과위생사, 치과의사, 치위생과 학생으로 총 124명이고, 자기기입식 설문지를 작성했다. 수집된 자료는 독립 t-검정, ANOVA로 일반적인 특징에 따라 그 차이를 비교했고, 이들의 관계는 Pearson 상관관계분석으로 분석했다. 연구결과: 검진 대상자에게 구강 검사와 방사선사진 촬영 등은 꼭 필요한 검사항목이고, 칫솔질과 구강용품 사용, 정기 검진의 중요성을 교육해야 하며, 대구치 실런트와 치면세마와 같은 예방 처치를 제공해야 한다고 생각했다. 또한 치료 서비스에서는 광중합형 레진과 GI 충전이 필요하다고 응답했다. 검진 주기를 치료보다는 교육과 예방을 더 짧게 해야 한다고 생각했다. 치위생과 학생이 치과의사와 치과위생사보다 검진, 교육, 예방, 치료 서비스가 더 중요하다고 응답했다. 구강검진과 교육 및 치료 간의 상관관계가 높았고, 필수 서비스와 중요성도 정(+)의 상관관계를 가졌다. 결론: 필수적이고 중요하다고 생각하는 구강 검사, 교육, 예방, 치료 서비스를 치과주치의 프로그램으로 어린이에게 제공해야 한다. 구강보건 교육과 예방관리는 치료보다 더 자주 제공되어야 하고, 그 중요성을 치위생과 학생뿐만 아니라 서비스의 주체인 치과위생사와 치과의사에게도 강조할 필요가 있다.

색인: 아동, 치과위생사, 치과의사, 주치의, 보건교육, 치과주치의