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Evaluating Parental Perspectives on Fluoride Varnish Application Using the "Fluoride Varnish Parent Attitude, Belief Scale"

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ABSTRACT

Objective: Despite the known efficacy and safety of fluoride varnish in preventing dental caries, parental refusal remains a significant challenge. This study compares the sociodemographic characteristics, information sources, and attitudes and beliefs of parents who accept or refuse fluoride varnish application using the "Parental Attitude and Belief Scale Toward Fluoride Varnish."

Methods: The study included 200 parents of pediatric patients who applied to the Department of Pediatric Dentistry at Necmettin Erbakan University Faculty of Dentistry and agreed to participate in the study. A questionnaire consisting of 34 questions related to the "Fluoride Varnish Parent Attitude, Belief Scale" and parents' oral hygiene habits was administered. Positive and negative attitude scores, as well as scale scores, were obtained from the questions related to positive and negative attitudes on the scale.

Results: Forty percent of parents are unaware of fluoride varnish. When examining the demographic characteristics of participants and their attitudes towards fluoride varnish, a difference exists between the awareness rate of fluoride varnish among university graduates and those with other educational levels ($p = 0.002$). In terms of age groups, a difference is noted between the positive attitude scores of the 31-40 age group and those of the 41 and older age group ($p = 0.040$). A difference was also found between the negative attitude scores of those living in the city center and those living in rural areas ($p = 0.006$).

Conclusion: Own study demonstrates that parents' knowledge levels regarding the application of fluoride varnish are insufficient and that an increase in educational level positively impacts awareness. Younger parents exhibit a more open-minded attitude, while those living in the city center have higher negative attitude scores. Based on findings, community-based and multi-channel education strategies should be developed to reduce the rejection of fluoride varnish.

KEYWORDS: Fluoride, Fluoride Acceptance, Fluoride Varnish, Oral Health Literacy, Parental Attitude

1. INTRODUCTION

Tooth decay is a significant public health issue that begins in childhood and negatively impacts quality of life. Its treatment is both difficult and costly; however, it can be largely prevented through evidence-based preventive measures. Fluoride provides effective protection against decay by supporting the remineralisation of tooth enamel, reducing demineralisation, and slowing the growth of microorganisms on tooth surfaces. The American Dental Association (ADA) recommends topical fluoride application every 3–6 months for all children at risk of decay (1). Similarly, the World Health Organisation (WHO) and other health authorities recommend regular dental check-ups from childhood onwards, along with the use of fluoride toothpaste and, additionally, fluoride varnish (2,3). Some countries apply fluoride varnish in school health programmes in line with WHO recommendations. Although numerous studies show that the application of fluoride varnish is safe and effective from early childhood onwards, some parents are seen to reject this practice. When the reasons for rejection are examined, it is understood that there are widespread beliefs among parents that fluoride negatively affects children's brain tissue or digestive system or causes learning difficulties.

It is well known that hygiene habits acquired during early childhood are largely influenced by parents' attitudes, behaviours, and daily practices. Children learn behaviours such as toothbrushing frequency, personal care routines and the importance of oral hygiene through observation and largely adopt them by imitating their parents. The literature shows that parents' toothbrushing habits and dental visit patterns are decisive in children's oral hygiene behaviours (4-6).

In light of all this literature, systematically assessing parents' attitudes, beliefs and levels of concern regarding fluoride varnish is of great importance both in understanding the reasons for current hesitations and in strengthening the sustainability of preventive oral health programmes. Our study aims to evaluate parents' perspectives on the application of fluoride varnish and to examine the possible relationship between these attitudes and sociodemographic and oral hygiene habits.

2. MATERIAL AND METHODS

This study is a descriptive and cross-sectional survey aimed at assessing parents' attitudes, beliefs, and levels of concern regarding

the application of fluoride varnish. The sample for the study consisted of parents who applied to the Department of Paediatric Dentistry at Necmettin Erbakan University (NEU) Faculty of Dentistry and volunteered to participate in the study. The inclusion criteria for the study were: being over 18 years of age, agreeing to complete the questionnaire form in full, and being a parent. Participants who could not read or write Turkish and those who left incomplete data on the questionnaire form were excluded from the study.

2.1. Ethical Approval

Ethical approval for the study was granted by the Non-Pharmaceutical and Non-Medical Device Research Ethics Committee of Necmettin Erbakan University (Date: 25.12.2025, Decision No: 2025/707). All procedures were performed in accordance with the ethical standards of the Declaration of Helsinki.

2.2. Power Analysis

The study sample consisted of 200 parents. To determine the representativeness of the sample, a power analysis was performed using G*Power software. For a one-sample design with a significance level of $\alpha = 0.05$ and a medium effect size (Cohen's $d = 0.50$), a sample size of 200 participants provided a statistical power of over 95%. This sample size was determined to be sufficient for the statistical analyses.

2.3. Data Collection Tools

Two main tools were used to collect data:

1. Demographic Characteristics and Oral Hygiene Habits Information Form: This form comprises questions regarding participants' sociodemographic data—such as age, gender, educational level, employment status, income level, and number of children—as well as their oral hygiene habits, including frequency of tooth brushing, dental floss usage, sharing of personal care items, and frequency of dental check-ups. Additionally, it investigates participants' knowledge levels regarding fluoride varnish and their sources of information.
2. Fluoride Varnish Parent Attitude, Belief Scale: An 11-item, 4-point Likert-type scale was used to measure parents' attitudes and concerns regarding fluoride varnish applications. The scale consists of three subscales: 'Positive Attitudes and Beliefs', 'Negative Attitudes', and 'Concerns'. In the scoring system, items 1, 2, 3, 4, and 10 were reverse-scored and included in the analysis.

2.4. Implementation Process and Ethical Considerations

The data collection process was conducted by the researcher through face-to-face interviews in the waiting area of the NEU Department of Paediatric Dentistry outpatient clinic. Participants were provided with detailed information about the study and were asked to sign an Informed Consent Form.

The questionnaires were completed on paper; no clinical intervention, procedure, or radiological imaging was performed on the children during the study period. To protect the confidentiality of the data, all forms were anonymised and coded, and no identifying information was recorded. It was guaranteed that the collected data would be used solely for scientific purposes and would be securely stored after analysis.

2.5. Statistical Analysis

The data were analysed using IBM SPSS Statistics (v25.0) software. Descriptive statistics are presented as number (n), percentage (%), median, and interquartile range (IQR). The normality of the data distribution was examined using visual and analytical methods (Kolmogorov-Smirnov/Shapiro-Wilk) and found to be non-normal. For intergroup comparisons, the Mann-Whitney U test was used for two independent groups, and the Kruskal-Wallis test was used for more than two groups. Where significant differences were found, the Bonferroni-corrected Dunn test was applied post-hoc. The chi-square test was preferred for the analysis of categorical data. The level of statistical significance was set at $p < 0.05$.

3. RESULTS

The study was completed with a total of 200 participants, 71.5% of whom were female parents. It was determined that 56.5% of the participants were aged between 31 and 40, 97% were married, and 73% resided in the city centre. In terms of educational status, 45.5% of parents were primary school graduates, while 41.5% of children were aged 10 years and above, and 93.3% attended state schools (Table 1). When the participants' self-care habits were examined, it was found that 46.5% brushed their teeth once a day, 98.5% had their own toothbrush, and 40% of parents were unaware of the contents of the fluoride varnish application. It was found that the most common source of information about fluoride varnish application was dentists (70.2%), followed by the internet (30.8%) and social media (15.8%) (Table 2).

When comparing scale scores with demographic variables, it was determined that the positive attitude subscale scores of parents aged 31-40 were significantly higher than those aged 41 and above ($p=0.040$) (Table 3). In terms of place of residence, it was observed that the negative attitude scores of participants residing in the city centre were significantly higher than those living in districts or villages ($p=0.006$) (Table 3). Furthermore, it was found that parents who did not feel discomfort when not brushing their

teeth had higher positive attitude scores than those who did feel discomfort (p=0.022) (Table 4). In the relationship established between educational level and fluoride awareness, it was found that university graduates' knowledge of the practice was significantly higher than other groups (p=0.002) (Table 5). In analyses conducted in terms of information sources, those who obtained information about fluoride from school teachers (p=0.030) and their social environment (p=0.028) had significantly higher positive attitude scores (Table 6). On the other hand, variables such as gender, marital status, employment status, income level, number of children, and school type did not show a statistically significant difference in scale scores (p>0.05).

4. DISCUSSION

Fluoride varnish is one of the most fundamental preventive treatment methods with proven reliability and effectiveness in preventing dental caries (7-9). This study was conducted to assess parents' knowledge levels, attitudes, and beliefs regarding fluoride varnish application. The most important findings of our research are that a high percentage of parents (40%) do not have sufficient awareness about fluoride varnish, those living in city centres display a more negative attitude towards the application, and university graduates have a significantly higher level of fluoride awareness compared to other groups.

In the study conducted by Carle et al. (10), a 20-item 'Fluoride Hesitancy Identification Tool' (FHIT) was developed to psychometrically assess parents' resistance to topical fluoride application, and the validity and reliability of this scale were demonstrated. Analysis using this scale revealed that fluoride hesitancy is underpinned by five main dimensions. These dimensions are: the belief that fluoride is unnecessary; the perception that it is a chemical that should be avoided; the belief that it is directly harmful; high uncertainty about its application; and perceived pressure and distrust of dentists' motivations. The study emphasises that parents may experience varying levels of hesitancy across these different dimensions, and that strategies to prevent fluoride refusal must take into account the specific values reported by each individual and their combined effect. The 40% knowledge gap identified among parents in our study and the negative attitudes exhibited by participants in the city centre are consistent with the dimensions of the "Fluoride Hesitancy Identification Tool" (FHIT) developed by Carle et al. (10). Carle et al. stated that factors such as uncertainty and distrust of dentists underlie fluoride hesitancy (10). The lack of knowledge in our findings supports the uncertainty defined in the study by Carle et al.

The finding in our study that 40% of parents were unaware of the application of fluoride varnish is consistent with similar studies in the literature. A study by Chi et al. (11) reported that 50.4% of parents could not identify fluoride varnish or had incorrect/incomplete information about it. The higher awareness level among university graduates in our study (74.3%) is consistent with Chi et al.'s emphasis on the effect of educational differences on knowledge levels. The fact that parents living in city centres had higher negative attitude scores may support the hypothesis mentioned by Chi et al. that misinformation from the internet and social media is more prevalent in modern and urban societies.

When examining the level of knowledge among parents regarding fluoride varnish in our study, 35% had only heard of it, while only 25% stated that they knew what the application involved. This finding is consistent with that reported by Aljami et al. (12), who found that only 36.9% of parents had a good level of knowledge. Furthermore, Aljami et al. (12) noted that 55% of parents had no prior knowledge about fluoride varnish, highlighting the low level of awareness in the literature, similar to the total of "not knowing" and "only having heard the name" (75%) in our study.

In terms of information sources, the finding that 70.2% of parents in our study indicated dentists as their most important source of information is consistent with the finding by Aljami et al. (12) that dentists were the primary source of information (23%). However, the fact that the dentist effect is numerically more pronounced in our study emphasises the importance of information activities in the clinical setting. The use of social media (15.8%) and the internet (30.8%) as sources of information also highlights the impact of digital platforms on preventive dentistry awareness in modern society, similar to the literature. To address the lack of information, seen as one of the reasons for parental fluoride refusal, it is recommended that digital channels be used by dentists for more effective and accurate information transfer.

The original contribution of our study to the literature is the complementary role of social channels such as schools (9.2%) and social environment (6.7%) in shaping attitudes towards preventive dentistry. Although dentists are accepted as the primary source of information in the literature, school-based information and social networks ensure that professional knowledge is integrated into parents' daily lives and minimise potential biases towards clinical advice. This finding supports the need for multi-channel communication emphasised by Aljami (12) and Almehmadi (13) with numerical data, revealing that school and social environment are strategic elements that reinforce the dentist's influence.

In our study, the fact that variables such as income level, number of children, and employment status did not create a statistically significant difference in scale scores indicates that fluoride awareness is related to access to information channels rather than socioeconomic opportunities. Although this differs from Aljami et al.'s (12) finding that income level affects knowledge, it supports the general view in the literature that the main obstacle to the widespread provision of preventive services is a lack of knowledge rather than economic factors.

The fact that 92% of our participants have regular self-care habits and 86.5% feel uncomfortable when neglecting tooth brushing reveals the high hygiene motivation of our sample when compared to the brushing rates reported by Harper et al. (14) among adults

in Alabama (70.5%). However, despite this individual awareness, the 40% lack of knowledge about fluoride varnish is similar to the low level of awareness of professional applications (12.06%) found in the study by Birant et al. (15). While Harper et al. (14) reported that the general knowledge of fluoride among adults in the USA was at a high level of 92.4%, the study by Birant et al. and our study, both conducted in Turkey, point to a technical knowledge gap regarding professional protective applications. The fact that dentists are preferred as the primary source of information by 70.2% of respondents demonstrates the strategic importance of professional clinical counselling in closing this gap, despite the warning emphasised by Birant et al. (15) that social media can create information pollution.

5. CONCLUSION

Our study reveals that a significant proportion of parents lack sufficient awareness about the application of fluoride varnish and that participants living in city centres in particular exhibit a more negative attitude towards the application. The high level of awareness observed among university graduates confirms the decisive role of education and access to accurate information in the acceptance of preventive dentistry services. Accordingly, a multi-channel communication strategy should be adopted to promote preventive dentistry practices, supported by dentist-centred information activities, school education, and reliable social networks. It is particularly important for dentists to play a more active role on digital platforms to minimise information pollution originating from the internet and to provide evidence-based, transparent, and personalised clinical counselling services addressing parents' individual concerns (fear of chemicals, uncertainty, etc.).

DISCLOSURES

Ethical Approval: Ethical approval for the study was granted by the Non-Pharmaceutical and Non-Medical Device Research Ethics Committee of Necmettin Erbakan University (Date: 25.12.2025, Decision No: 2025/707). All procedures were performed in accordance with the ethical standards of the Declaration of Helsinki.

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Table 1. Sociodemographic characteristics of participating parents and children.

Features	n	%
Gender		
Female	143	71,5
Male	57	28,5
Parent's Age		
18-30	22	11,0
31-40	113	56,5
41-50	54	27,0
Aged 51 and over	11	5,5
Marital status		
Married	194	97,0
Single	6	3,0
Education status		
Primary Education	91	45,5
High School	54	27,0
Associate Degree	17	8,5
Bachelor's Degree	31	15,5
Graduate Degree	7	3,5
Employment status		
Not employed	130	65,0
Employed	70	35,0
Income status		
0–22100	62	310
22100–59999	93	46,5
60000 and above	45	22,5
Place of residence		
City center	146	73,0
District center	42	21,0
Town/village	12	6,0
Number of children		
1	10	5,0
2	82	41,0
3	76	38,0
4 and above	32	16,0
Age of child participating in the study		
Under 3 years	3	1,5
3–5 years	12	6,0
5–6 years	28	14,0
7–10 years	74	37,0
10 years and above	83	41,5
Type of school (n=194)		
Public school	181	93,3
Private school	13	6,7

Table 2. Participants' oral and dental health habits, their knowledge of fluoride and fluoride varnish, and the sources from which they obtained information

Characteristics	n	%
Tooth brushing frequency		
Twice a day	67	33,5
Once a day	93	46,5
I do not brush regularly	39	19,5
I never brush	1	0,5
Having a personal toothbrush		
Yes	197	98,5
No	3	1,5
Use of interdental brush / dental floss		
Yes	62	31,0
No	138	69,0
Regular performance of self-care habits (tooth brushing, etc.)		
Yes	184	92,0
No	16	8,0
Feeling discomfort when personal care is not performed		
Yes	184	92,0
No	16	8,0
Feeling discomfort when teeth are not brushed		
Yes	173	86,5
No	27	13,5
Sharing personal care items with others		
Yes	8	4,0
No	192	96,0
Time of last dental visit		
Within the last 6 months	100	50,0
Within the last 1 year	57	28,5
Within the last 3 years	19	9,5
Within the last 5 years	18	9,0
I never visit	6	3,0
Awareness of what fluoride varnish is		
Yes, I know what it is	50	25,0
I have only heard the name	70	35,0
No, I do not know	80	40,0
Sources of information about fluoride and fluoride varnish applications (n=121)*		
Dentist / Oral and dental health specialist	85	70,2
Family physician	10	8,3
School health staff	18	15,0
Ministry of Health announcements / public service announcements	11	9,2
Internet	37	30,8
Social media (Facebook, Instagram, TikTok, YouTube, etc.)	19	15,8
Television / newspaper	6	5,0
Family members / friends	8	6,7
School teachers	11	9,2
Previous personal experiences	6	5,0

* Multiple options were selected.

Table 3. Comparison of subscale and total scores obtained from the scale according to the sociodemographic characteristics of participating parents and children

	Subscales			Total score
Characteristics	**Positive attitude**	**Negative attitude**	**Anxiety**	
Gender*				
Female	9,0 (8,0-12,0)	8,0 (8,0-10,0)	7,0 (6,8-8,3)	25,0 (23,0-29,0)
Male	11,0 (8,0-12,0)	8,0 (8,0-11,5)	7,0 (7,0-8,0)	26,0 (23,0-30,0)
p	0,351	0,937	0,789	0,743
Parental age**				

18–30	9,0 (8,0-9,0)	8,0 (8,0-10,5)	7,0 (6,0-8,0)	24,0 (22,5-26,5)
31–40	10,0 (8,0-12,0)	8,0 (8,0-10,0)	8,0 (7,0-8,8)	26,5 (24,0-29,0)
41 years and above	8,0 (8,0-11,0)	8,0 (8,0-11,0)	7,0 (6,0-8,3)	24,5 (22,8-27,5)
p	**0,040**	0,732	0,174	0,070
Marital status*				
Married	9,0 (8,0-12,0)	8,0 (8,0-10,0)	7,0 (7,0-8,0)	25,0 (23,0-28,0)
Single	10,0 (5,0-12,0)	8,5 (8,0-14,3)	7,5 (6,3-8,8)	28,0 (23,3-29,0)
p	0,727	0,555	0,933	0,622
Educational level**				
Primary school	10,0 (8,0-12,0)	8,0 (8,0-10,0)	7,0 (7,0-9,0)	26,0 (25,0-28,8)
High school	9,0 (8,0-12,0)	8,0 (7,3-10,8)	7,0 (6,0-8,0)	25,0 (23,3-28,0)
University	9,0 (8,0-12,0)	8,0 (8,0-10,0)	7,0 (7,0-9,0)	25,0 (23,0-30,0)
p	0,741	0,660	0,431	0,637
Employment status*				
Not employed	9,0 (8,0-12,0)	8,0 (8,0-10,0)	7,0 (6,0-9,0)	25,0 (23,0-29,0)
Employed	9,0 (8,0-11,8)	8,5 (8,0-11,5)	7,0 (7,0-8,0)	26,0 (24,0-27,8)
p	0,737	0,353	0,979	0,734
Income level**				
0–22100	12,0 (8,0-12,0)	8,0 (8,0-11,0)	7,0 (6,5-8,0)	27,0 (25,0-28,5)
22100–59999	9,0 (8,0-11,0)	8,0 (8,0-9,0)	7,0 (7,0-8,0)	24,0 (23,0-27,8)
60000 and above	9,0 (8,0-12,0)	9,0 (8,0-12,0)	8,0 (6,8-9,5)	27,0 (23,0-31,3)
p	0,519	0,075	0,379	0,124
Number of children**				
1	8,0 (8,0-8,5)	8,0 (8,0-10,0)	8,0 (7,0-8,0)	24,0 (23,0-26,5)
2	9,0 (8,0-12,0)	8,0 (8,0-10,0)	7,0 (6,8-8,0)	25,0 (23,0-28,3)
3	9,0 (8,0-12,0)	8,0 (8,0-12,0)	8,0 (7,0-9,0)	27,0 (23,0-29,0)
4 and above	11,0 (9,0-12,0)	8,0 (7,0-10,0)	7,0 (6,0-8,5)	26,0 (24,5-28,0)
p	0,162	0,914	0,394	0,672
Age of child participating in the study**				
Under 5 years	10,0 (10,0-12,0)	7,0 (6,0-10,5)	7,0 (5,5-9,0)	25,0 (21,5-31,0)
5–6 years	8,5 (8,0-12,0)	8,0 (8,0-10,5)	7,0 (6,8-8,0)	25,0 (23,8-27,3)
7–10 years	9,0 (8,0-12,0)	8,0 (8,0-11,5)	8,0 (6,5-9,0)	26,0 (23,0-29,0)
10 years and above	10,0 (8,0-12,0)	8,0 (8,0-10,0)	7,0 (7,0-8,0)	26,0 (23,0-29,0)
p	0,233	0,290	0,273	0,819
Type of school*				
Public school	9,0 (8,0-12,0)	8,0 (8,0-10,0)	7,0 (7,0-8,0)	25,0 (23,0-29,0)
Private school	12,0 (8,0-12,0)	8,0 (8,0-11,0)	7,0 (6,0-9,5)	27,0 (23,0-31,5)
p	0,658	0,791	0,423	0,895

Place of residence*				
City center	9,0 (8,0-12,0)	9,0 (8,0-11,0)	8,0 (7,0-9,0)	26,0 (23,5-29,5)
District / town / village	9,0 (8,0-12,0)	8,0 (8,0-8,0)	7,0 (6,0-8,0)	25,0 (23,0-27,0)
p	0,552	**0,006**	0,134	0,089

* Mann-Whitney U testi **Kruskal-Wallis testi

Table 4. Comparison of subscale and total scores obtained from the scale based on participants' oral and dental health habits and their knowledge of fluoride and fluoride varnish

Oral and dental health habits	**Subscales**			**Total score**
	Positive attitude	**Negative attitude**	**Anxiety**	
Frequency of tooth brushing**				
Twice a day	9,0 (8,0-12,0)	8,0 (8,0-10,5)	7,0 (7,0-8,0)	26,0 (23,5-29,0)
Once a day	9,5 (8,0-12,0)	8,0 (8,0-10,0)	7,5 (6,0-9,0)	24,5 (23,0-29,0)
I don't brush regularly	9,0 (8,0-12,0)	8,5 (8,0-10,0)	7,0 (7,0-8,0)	25,5 (24,3-26,8)
p	0,961	0,801	0,889	0,846
Having a personal toothbrush*				
Yes	9,0 (8,0-12,0)	8,0 (8,0-10,0)	7,0 (7,0-8,0)	25,0 (23,0-28,3)
No	13,0 (13,0-13,0)	11,0 (11,0-11,0)	8,0 (8,0-8,0)	33,0 (33,0-33,0)
p	0,141	0,366	0,676	0,169
Use of interdental brush / dental floss*				
Yes	9,0 (8,0-12,0)	8,0 (8,0-10,0)	7,0 (7,0-8,3)	26,5 (23,0-29,0)
No	10,0 (8,0-12,0)	8,0 (8,0-10,0)	7,0 (6,5-8,0)	25,0 (23,5-28,5)
p	0,260	0,345	0,995	0,893
Regular performance of self-care habits (tooth brushing, etc.)*				
Yes	9,0 (8,0-12,0)	8,0 (8,0-10,0)	7,0 (6,5-8,0)	25,0 (23,0-28,5)
No	8,8 (10,0-13,3)	9,0 (9,0-9,5)	7,5 (7,0-8,3)	25,5 (24,5-30,0)
p	0,325	0,848	0,607	0,621
Feeling discomfort when personal care is not performed*				
Yes	9,0 (8,0-12,0)	8,0 (8,0-10,0)	7,0 (7,0-8,0)	26,0 (23,0-29,0)
No	11,0 (8,5-12,8)	8,0 (6,5-10,3)	7,0 (7,0-7,8)	25,0 (23,5-31,0)
p	0,391	0,507	0,782	0,971
Feeling discomfort when teeth are not brushed*				
Yes	9,0 (8,0-12,0)	8,0 (8,0-10,0)	7,0 (7,0-8,0)	25,0 (23,0-28,0)
No	11,5 (10,3-12,0)	8,0 (7,3-10,8)	7,0 (7,0-8,8)	26,5 (25,0-32,5)
p	**0,022**	0,778	0,955	0,250

Sharing personal care items with others*				
Yes	11,0 (10,0-12,5)	6,0 (6,0-11,5)	7,0 (5,0-7,5)	25,0 (22,5-29,5)
No	9,0 (8,0-12,0)	8,0 (8,0-10,0)	7,0 (7,0-8,0)	25,5 (23,0-29,0)
p	0,110	0,374	0,110	0,887
Time of last dental visit**				
Within the last 6 months	9,0 (8,0-12,0)	8,0 (8,0-10,0)	7,0 (7,0-8,0)	26,0 (23,0-28,0)
Within the last 1 year	9,0 (8,0-12,0)	8,0 (8,0-11,0)	8,0 (6,3-8,8)	24,5 (23,0-31,0)
3 years and earlier	12,0 (8,3-13,0)	8,0 (5,0-8,8)	8,0 (7,0-8,0)	25,5 (24,0-27,8)
p	0,217	0,293	0,590	0,985
Awareness of what fluoride varnish is**				
Yes, I know what it is	9,5 (8,0-12,0)	8,0 (8,0-10,0)	7,0 (7,0-8,3)	25,5 (23,0-29,0)
I have only heard the name	9,0 (8,0-12,0)	8,0 (8,0-9,8)	7,0 (6,3-8,0)	25,0 (23,0-27,8)
No, I do not know	8,0 (8,0-8,0)	12,0 (12,0-12,0)	8,0 (8,0-8,0)	28,0 (28,0-28,0)
p	0,577	0,330	0,646	0,530

* Mann-Whitney U testi **Kruskal-Wallis testi

Table 5. Comparison of participants' knowledge of fluoride varnish application according to their educational level

Characteristics (n=200)	**Awareness of fluoride varnish application n (%)**			**p**
Educational level	**Yes, I know**	**I have only heard the name**	**I do not know at all**	
Primary school	15 (30,0)	27 (38,6)	49 (61,3)	
High school	15 (30,0)	19 (27,1)	20 (25,0)	**0,002***
University	20 (40,0)	24 (34,3)	11 (13,8)	

*Ki kare test

Table 6. Comparison of scale scores and total scores according to the sources from which participants obtained information about fluoride varnish applications

Sources of information about fluoride and fluoride varnish applications	**Subscales**			**Total score**
	Positive attitude	**Negative attitude**	**Anxiety**	
Dentist / Oral and dental health specialist				
Yes	9,0 (8,0-12,0)	8,0 (8,0-10,0)	7,0 (7,0-8,0)	25,0 (23,0-28,0)
No	10,5 (8,0-12,0)	8,0 (8,0-11,3)	8,0 (6,0-8,3)	26,5 (23,8-29,5)
p	0,289	0,794	0,708	0,363
Family physician (n=70)				
Yes	9,0 (8,5-12,0)	8,0 (8,0-9,5)	8,0 (6,0-9,0)	27,0 (22,5-29,5)
No	9,0 (8,0-12,0)	8,0 (8,0-10,0)	7,0 (7,0-8,0)	25,0 (23,0-29,0)
p	0,752	0,957	0,819	0,991
School health staff				
Yes	12,0 (8,0-12,0)	8,0 (8,0-11,0)	7,5 (6,0-9,0)	26,5 (23,0-31,5)
No	9,0	8,0	7,0	25,0

	(8,0-12,0)	(8,0-10,0)	(7,0-8,0)	(23,0-28,0)
p	0,092	0,558	0,882	0,204
****Ministry of Health announcements / public service announcements****				
Yes	11,0	9,5	8,0	28,5
	(8,8-12,0)	(8,8-13,0)	(6,8-9,0)	(25,3-33,3)
No	9,0	8,0	7,0	25,0
	(8,0-12,0)	(8,0-10,0)	(7,0-8,0)	(23,0-28,0)
p	0,389	0,060	0,412	0,126
****Internet****				
Yes	11,5	8,0	8,0	27,5
	(8,0-13,0)	(7,5-12,0)	(6,8-9,0)	(23,0-31,8)
No	9,0	8,0	7,0	25,0
	(8,0-12,0)	(8,0-9,8)	(7,0-8,0)	(23,3-28,0)
p	0,071	0,854	0,267	0,288
****Social media (Facebook, Instagram, TikTok, YouTube, etc.)****				
Yes	12,0	10,0	9,0	31,0
	(8,5-13,0)	(8,0-12,0)	(6,5-11,5)	(23,5-35,5)
No	9,0	8,0	7,0	25,0
	(8,0-12,0)	(8,0-9,5)	(7,0-8,0)	(23,0-28,0)
p	0,122	0,075	0,064	0,062
****Television / newspaper****				
Yes	11,0	10,0	8,0	31,0
	(9,0-12,0)	(8,0-12,0)	(7,0-9,0)	(24,0-31,0)
No	9,0	8,0	7,0	25,0
	(8,0-12,0)	(8,0-10,0)	(7,0-8,0)	(23,0-28,0)
p	0,451	0,340	0,418	0,249
****Family members / friends****				
Yes	12,0	9,0	7,5	27,5
	(9,8-13,0)	(5,5-12,3)	(5,8-9,5)	(22,5-33,3)
No	9,0	8,0	7,0	25,0
	(8,0-12,0)	(8,0-10,0)	(7,0-8,0)	(23,0-28,0)
p	**0,028***	0,960	0,976	0,635
****School teachers****				
Yes	12,0	8,0	7,0	27,0
	(9,5-13,0)	(7,0-10,0)	(6,5-9,0)	(24,0-30,5)
No	9,0	8,0	7,0	25,0
	(8,0-12,0)	(8,0-10,0)	(7,0-8,0)	(23,0-28,0)
p	**0,030***	0,612	0,845	0,327
****Previous personal experiences****				
Yes	10,5	9,0	7,5	26,0
	(8,3-12,8)	(6,0-11,5)	(5,3-10,5)	(23,3-30,3)
No	9,0	8,0	7,0	25,0
	(8,0-12,0)	(8,0-10,0)	(7,0-8,0)	(23,0-29,0)
p	0,507	0,914	0,952	0,857

*Mann Whitney U test