

Prevalence of Dental Fluorosis and Associated Factors in Schoolchildren in Cartagena, Colombia

Author names:

Guillermo Tamayo Cabeza ^a

Andrea Ramirez Varela ^a

E. Angeles Martinez Mier ^b

Farith Gonzalez Martinez ^c

Institucional affiliations

^{a.} College of Medicine, Universidad de los Andes, Bogotá, Colombia. E-mail:

an-rami2@uniandes.edu.co

^{b.} School of Dentistry, Indiana University Purdue University, Indianapolis, USA. E-mail:

esmartin@iu.edu

^{c.} Faculty of Dentistry, Universidad de Cartagena, Cartagena, Colombia. E-mail:

fgonzalezml@unicartagena.edu.co

Abstract

Objectives: To describe the prevalence of dental fluorosis and associated factors related to fluoride ingestion in schoolchildren between 6 to 12 years of age in the city of Cartagena, Colombia, in 2018.

Methods: A cross sectional study was performed in a sample of 142 schoolchildren in Cartagena. Sampling was a stratified random probabilistic type, selecting a proportion of schoolchildren in each locality of Cartagena. Clinical examination using Thylstrup and Fejerskov index was done to detect dental fluorosis. A structured survey was used to evaluate the associated factors (frequency of drinking water consumption, fluoridated salt, foods and beverages with high content of fluoride, and accidental ingestion of dental hygiene products). A descriptive analysis was performed for each variable calculating frequencies and proportions. Then, a bivariate analysis with Pearson's Chi-squared test and a multivariate analysis from a logistic regression with robust errors, with models adjusted by potential confounders. The significance level was fixed at 0.05.

Results: Prevalence of dental fluorosis was 69.72%. Mild and moderate type of dental fluorosis were found with higher frequency, showing proportions of 62.68% and 7.04% respectively. Schoolchildren of ages 9-12-year-old were found to had 2.24 times the chance of having dental fluorosis than 6-8-year-old children (OR=2.24, 95% CI=1.02-5.03, p value=0.0472). Children who started self-brushing before the age of 3 years had 2.54 times the chance of having dental fluorosis than those who started after that age (OR= 2.54, 95% CI=1.07-6.47, p value= 0.0400). Also, those who started using mouthwashes at the age of 3 years had 77% less chance of presenting dental fluorosis than children who started before that age (OR=0.23, 95% CI= 0.05 - 0.80, p value= 0.0371).

Conclusions: The high prevalence of dental fluorosis in schoolchildren in Cartagena, Colombia reflects the need to design and implement effective public health programs to regulate multiple exposures at early ages, which could contribute to reduce its prevalence in this population.

Introduction

Prevalence of dental fluorosis in Colombia has increased during the past decades. The third National Oral Health Study (ENSAB in Spanish), carried out in 1999, reported a prevalence of dental fluorosis of 25.7% in 6-7 year-old children and 18.7% in 12 year-old children.¹ Later, the ENSAB IV, carried out during 2013 and 2014, reported a prevalence of 62.15% in 12 year-old children.² This latter value shows a considerable increase of dental fluorosis prevalence in mixed dentition (between 10 to 12 years of age) in Colombia, which may be due to an overexposure to multiple fluoride sources during these ages.³

The ENSAB IV also reported that Cartagena is the city of the Caribbean region of Colombia with the highest prevalence of dental fluorosis. Likewise, previous studies carried out in the city of Cartagena (Colombia) have reported a high prevalence of dental fluorosis between 64.8% and 66.5% in schoolchildren of 6-12 years of age.^{4,5} These studies report a possible association between the high prevalence of dental fluorosis and factors related to fluoride exposure such as: high fluoride toothpaste ingestion and consumption of salt used to prepare foods. However, currently, there is no research based on a representative sample of schoolchildren in the city of Cartagena, which could provide evidence to estimate the prevalence of this condition and its associated factors.

Evidence of dental fluorosis prevalence in schoolchildren could contribute to transform public health policies in Colombia aimed at preventing this condition. At this moment, the control of dental fluorosis has focused mainly on monitoring fluoride levels in drinking water and salt, not on the assessment of exposure from multiple related factors, for example, dental hygiene products usage and ingestion and some foods consumption, which can increase the risk of dental fluorosis due to an overexposure in the body.

There is a need to obtain scientific evidence to inform the distribution of dental fluorosis in this city, which could be used by governmental administrative departments to design and implement prevention programs based on risk factor identification, which can in turn, contribute to a decrease in its prevalence. Therefore, the aim of this study is to describe the prevalence of dental fluorosis and associated factors related to fluoride ingestion (frequency of drinking water consumption, fluoridated salt, foods and beverages with high content of fluoride, and accidental

ingestion of dental hygiene products) in schoolchildren between 6 to 12 years of age in the city of Cartagena, Colombia, in 2018.

Methods

Study design and sample

A school based cross-sectional study was carried out between the months of March and November of 2018, among schoolchildren (age group 6 – 12 years) from randomly selected public schools in urban and rural areas of Cartagena, Colombia. This city has 1,003,385 inhabitants (as reported in the national census in 2018 by DANE).⁶

Sample size was calculated considering a population of 50,628 schoolchildren enrolled in public schools of Cartagena, using a confidence level of 95%, a relative error of 4% and an estimated prevalence of 62.2% to arrive at a sample size of 559.⁷ However, the present report describes the prevalence of a preliminary sample of size 142 schoolchildren. A total of 164 schools were in the study area, and 10% of these schools were randomly selected for sampling (schools in urban area n=13; schools in rural area n=3).

This research protocol was conducted in full accordance with ethical principles according to World Medical Association Declaration of Helsinki (version 2018) and it was approved by the Ethics Committee of the Universidad de Cartagena, School of Dentistry. Written informed consents was obtained from parents and an assent of the child.

Sampling technique

Stratified random sampling was done by grades from first to fifth (primary school grades), considering each school as a sampling unit. Then, simple random sampling was done by classes, equivalent to the number of children by class, and the parents of the children in each class were invited to participate in the study.

Inclusion criteria

The primary inclusion criteria for the study enrollment were schoolchildren in the age group of 6 – 12 years, not suffering from any systemic illness, that assented to participate in the study whose parents accepted participation through written informed consent.

Data collection

Oral clinical examinations were performed by three dental specialists to evaluate dental fluorosis. A self-prophylaxis was required prior the examination procedure to eliminate dental plaque for better vision of each dental surface. Prevalence and severity of dental fluorosis were assessed with the TF (Thylstrup and Fejerskov) index using ten levels, where 0=sound surface, 1=fluorotic enamel of lowest severity and 9=fluorotic enamel with the highest severity. All examiners were trained and calibrated through and intra-inter examiner standardization process to ensure reliability. Kappa statistic values observed for this process were above 0.90. A modified self-administered questionnaire of associated dental fluorosis risk factors was validated by UNICA group of Universidad El Bosque, piloted and subsequently used in the study. The study questionnaire had dichotomous and polychotomous questions and was divided in five parts: sociodemographic characteristics: age, sex and residence (urban or rural area); type of water consumed during the first four years of life; type of milk consumed during the first four years of life; type and frequency of food consumption, including type of salt; exposure to dental hygiene products with high content of fluoride.

Data analysis

Statistical analysis was performed using Stata version 16 (Stata Corporation, College Station, USA). For descriptive analysis, frequencies and percentages were calculated, also graphical examination with bar charts were used. Chi-square tests were done to assess the association between prevalence of dental fluorosis and each factor. Multivariate analysis with logistic regression model was estimated using a stepwise procedure to assess factors associated with the presence or absence of dental fluorosis. Independent variables were included considering theoretical and biological relationships, as well as a statistical significance level of 0.20. The model was adjusted by possible confounding variables such as age and sex. Coefficients (OR) were estimated using confidence intervals of 95% and Wald tests of significance were performed. To evaluate the quality of the model estimations, goodness of fit was examined. Values of $p < 0.05$ were considered statistically significant.

Results

A total of 142 schoolchildren of age 6 to 12 years were included in the study. Most of the students were 9 – 12 years of age (52.11%) followed by 6 – 8 years (47.89%) of age group. The study sample was comprised of almost half of female students (51.40%). Figure 1 shows the dental fluorosis prevalence and severity. Prevalence was 69.72% and mild fluorosis was the most commonly reported type of severity among the participants.

The association of some risk factors and prevalence of dental fluorosis was analyzed for each factor individually. Regarding the association with age and sex, only the age group (6 – 8 or 9 - 12) showed a statistically significant relationship with dental fluorosis (Table 1). Schoolchildren between 9-12-year-old showed the highest prevalence of dental fluorosis (40.14%).

Among the factors related to exposure of oral health hygiene products, only the age at which the child started self-brushing was found to have a statistically significant relationship with prevalence of dental fluorosis (Table 2). The absence of dental fluorosis was higher in children who started self-brushing their teeth at 3 years old (40.85%) than those who started before that age.

The bivariate analysis used to assess the association between prevalence of dental fluorosis and factors related to water, foods (including milk) and salt consumption showed that only the frequency of some type of foods, such as cereals and fruits are related to prevalence of dental fluorosis statistically significant (Table 3).

Multiple logistic regression analysis showed that age group, the age at which the child started self-brushing, the age at which the child started to use mouthwashes, and frequency of fruits consumption were associated with the prevalence of dental fluorosis (Table 4). Children with ages between 9-12 years had 2.24 times the chance of having dental fluorosis than children with ages between 6-8 years. Children who started self-brushing before the age of 3 years had 2.54 times the chance of having dental fluorosis than those who started after that age. Also, those children who started to use mouthwashes at the age of 3 years had 77% less chance of presenting dental fluorosis than children who started before that age. Regarding fruit consumption, children who consumed fruits less than 2 times per week had higher chance (OR=2.74) of having dental fluorosis than children who consume them daily.

Discussion

To our knowledge, this is the first study that determines the prevalence of dental fluorosis and associated factors in 6-12 years-old schoolchildren in Cartagena, Colombia, with a representative sample of the city's schoolchildren. Key findings are an overall prevalence of 69.72%, and that age and the age at which the child started using dental hygiene products were associated with dental fluorosis.

Our first finding is slightly higher compared to previous studies performed in the city of Cartagena.^{4,5} It can also be considered higher than the national prevalence reported in the IV National Study of Oral Health carried out in Colombia between 2013 and 2014.² Likewise, our findings are similar to previous studies carried out in various cities and departments in Colombia, which describe the prevalence of this condition: Villavicencio (65.8% in 8-12 year-old children)⁸; Medellín (79.1% in 6 – 13 year-old children) ⁹; Bucaramanga (77% in 6 – 15 year-old children)¹⁰; Bogotá (48.1% in 6 – 8 year-old schoolchildren). Therefore, this shows a considerable increase of the prevalence of dental fluorosis, which can be associated to an over exposure of fluoride sources in children of these ages.

Two cross-sectional studies performed in the city of Cartagena in 2011 and 2012, respectively, reported a higher frequency of mild forms of dental fluorosis in schoolchildren.^{4,5} In the present study, the prevalence of mild forms was 62.68% of the total sample (Thylstrup and Fejerskov index codes 1 to 3) and only 7.04% of moderate forms were observed. Added to this, no severe forms were found through the clinical examination. This result of higher prevalence of mild and moderate cases was expected, as it has been reported that these forms of dental fluorosis are more common in locations without a high concentration of fluoride in drinking water,¹¹ but no data regarding studies that estimate the fluoride concentration of the main water system of Cartagena can be found yet.¹² However, the Colombian National Institute of Health uses the Information System for Quality Monitoring for Human Consumption (SIVICAP in Spanish) and reports the Water Quality Risk Indicator (IRCA in Spanish), being equal to 1 for Cartagena and indicates that there is less than 1.00 ppm of fluoride content in the drinking water. Thus, the level of fluoride in drinking water in Cartagena is below the maximum recommended concentration.

The present study estimates the association of the prevalence of dental fluorosis in schoolchildren with some sociodemographic characteristics such as age and sex. The findings showed that only age has a significant relationship with dental fluorosis. Nevertheless, as some

authors have mentioned, these findings are controversial and there is no consensus regarding the association of dental fluorosis and sociodemographic factors.¹¹ Bhagavatula et al. reported that fluoride intake from individuals from age 2 to 8 years plays a crucial role in defining the risk of dental fluorosis for late-erupting permanent teeth.¹³ Similarly, a higher prevalence of dental fluorosis at ages 9 to 12 in this study shows that exposure during early ages may define the appearance of the condition in permanent teeth. In this sense, some fluoride intake habits should be controlled at early ages.

The exposure related to the use of dental hygiene products with fluoride was found to have a stronger statistical association with the presence of dental fluorosis in the present study. Specifically, the age at which the child started self-teeth brushing and using mouthwashes. These have been reported as important exposures, especially, due to the possible lack of control by parents during the use of these products.¹⁴ González-Martínez et al. reported that low income families consider toothpaste with high content of fluoride as the only preventive measure against dental caries, which side effects are known.⁴ These side effects appear especially if toothpastes are ingested.¹⁵ Several studies have reported that children who use fluoride toothpaste (with more than 1,200 ppm) can have 1.6 and 1.83 times the risk of experiencing dental fluorosis,^{16,17} compared to children who use toothpaste with lower concentration of fluoride.¹⁸ Likewise, other reports agree with the findings of the present study, regarding that children who start self-brushing have 6.3 and 11 more chance of having dental fluorosis, compared to those who start before that age.¹⁹ This may be due to the lack of control of toothpaste ingestion during the toothbrushing, as it has been shown that children of ages 1 to 3 years ingest between 64% and 84% of toothpaste, even after five years of age.¹⁹ Secondly, this risk can be higher if children ingest mouthwashes, which are difficult to use and spit before three years of age.

Regarding fruits consumption, it was found that children who consumed fruits less than two times per week had 2.74 times the chance of having fluorosis, compared to those who consumed fruits daily. The Nutritional National Survey (ENSIN) of Colombia in 2015 reported that the most frequently consumed fruits by children of ages between 5 and 12 years were lemon and mango²⁰. The fluoride content of these two kinds of fruits have been described by Cantoral et al., being 12.33 µg/100 g fluoride content for mango and 0.87 µg/100 g. for lemon²¹. This difference of fluoride content shows the importance of considering information about the type of fruit that

the children consumed more frequently, which can be considered a limitation of the present study, that the questionnaire does not account the type and frequency of the specific fruit consumption.

This study should be interpreted considering some limitations, including the fact that the sociodemographic evaluation did not include variables related to parental education level or family income. Education of parents and caregivers can be a factor associated with the children supervision and instruction, considering the important role they play in controlling fluoride exposures in children.¹⁸ Nevertheless, strengths included the representative sample obtained to report the prevalence and severity of dental fluorosis in schoolchildren, which provides robust estimations.

The evidence provided in this study supports the high prevalence of dental fluorosis in public school children population in Cartagena, Colombia, also that there are some sources of fluoride to which children are exposed. Thus, it is important to prevent dental fluorosis by the identification and knowledge of the fluoride sources to avoid overexposure. Specifically, dental fluorosis can be prevented through the monitoring and control of fluoride sources to which children up to six years of age are exposed.

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Table 1. Bivariate analysis used to assess the association between prevalence of dental fluorosis and the age group and sex

Factors	Number with DF ^a (%)	Number without DF ^a (%)	X ²	p-value
Age group				
6 – 8 years	26 (18.30)	42 (29.58)	3.9099	0.048 ^b
9 – 12 years	17 (11.97)	57(40.14)		
Sex				
Male	22 (15.49)	51(35.92)	0.00149	0.9692
Female	21 (14.78)	48 (33.80)		

^a Dental fluorosis (Thylstrup and Fejerskov Index > 0)

^b P < 0.05; X² test

Table 2. Bivariate analysis used to assess the association between prevalence of dental fluorosis and factors related to exposure of oral health hygiene products

Factors	Number with DF ^a (%)	Number without DF ^a (%)	X ²	p-value
Age at which started to use toothpaste				
Less than 3 years	37 (26.06)	74 (52.11)	2.2428	0.1342
3 years or more	6 (4.22)	25 (17.61)		
Age at which started self-teeth brushing				
Less than 3 years	9 (6.33)	41 (28.87)	5.5139	0.01887 ^b
3 years or more	34 (23.94)	58 (40.85)		
The child uses toothpaste for adults				
Yes	15 (10.56)	41 (28.87)	0.5353	0.4644
No	28 (19.72)	58 (40.85)		
The child used to swallow the toothpaste				
Yes	28 (19.71)	66 (46.48)	0.03220	0.8576
No	15 (10.56)	33 (23.24)		
Frequency of tooth brushing				
2 times or less	24 (16.90)	59 (41.55)	0.17657	0.6743
3 times or more	19 (13.38)	40 (28.17)		
Amount of toothpaste used				
Half or less on the brush	22 (15.49)	58 (40.85)	0.67155	0.4125
More than half on the brush	21 (14.78)	41 (28.87)		

Age at which started to use
mouthwashes

Less than 3 years	3 (2.11)	18 (12.68)		
3 years or more	40 (28.17)	81 (57.04)	2.989	0.08394
Other	2 (1.40)	15 (10.56)		

^aDental fluorosis (Thylstrup and Fejerskov Index > 0)

^bP < 0.05; X² test

Table 3. Bivariate analysis used to assess the association between prevalence of dental fluorosis and factors related to water, foods and salt consumption

Factors	Number with DF ^a (%)	Number without DF ^a (%)	X ²	p-value
Type of drinking water				
Boiled/filter	26 (18.31)	45 (31.69)	2.7019	0.1002
Non boiled/Bottled	17 (11.97)	54 (38.03)		
Type of milk				
Liquid milk	24 (16.90)	61 (42.96)	0.42003	0.5169
Milk powder	19 (13.38)	38 (26.76)		
Age at which the child left breast milk				
6 months	16 (11.27)	36 (25.35)	0.00924	0.9234
12 months	27 (19.01)	63 (44.36)		
Legumes consumption				
Everyday	4 (2.817)	15 (10.56)	0.88496	0.3468
Less than 2 times/week	39 (27.46)	84 (59.15)		
Cereals consumption				
Everyday	31 (21.83)	53 (37.32)	4.273	0.03872*
Less than 2 times/week	12 (8.45)	46 (32.39)		
Vegetables consumption				
Everyday	18 (12.67)	45 (31.69)	0.15689	0.692
Less than 2 times/week	25 (17.61)	54 (38.03)		
Dairy consumption				
Everyday	21 (14.79)	37 (26.06)	1.6305	0.2016

Less than 2 times/week	22 (15.49)	62 (43.66)		
Red meat consumption				
Everyday	21 (14.78)	56 (39.43)	0.72139	0.3957
Less than 2 times/week	22 (15.49)	43 (30.28)		
Chicken consumption				
Everyday	12 (8.45)	31 (21.83)	0.16475	0.6848
Less than 2 times/week	31 (21.84)	68 (47.88)		
Fish consumption				
Everyday	9 (6.33)	13 (9.15)	1.3927	0.238
Less than 2 times/week	34 (23.94)	86 (60.56)		
Fruits consumption				
Everyday	18 (12.67)	23 (16.20)	5.0655	0.02441*
Less than 2 times/week	25 (17.61)	76 (53.52)		
Seafood consumption				
Everyday	1 (0.70)	3 (2.11)	0.054386	0.8156
Less than 2 times/week	42 (29.58)	96 (67.61)		
Type of salt of consumption				
Refined	41 (28.87)	84 (59.15)	3.1365	0.07656
Other	2 (1.40)	15 (10.56)		

^a Dental fluorosis (Thylstrup and Fejerskov Index > 0)

^b P < 0.05; X² test

Table 4. Multiple logistic regression analysis to assess independent effects of risk factors on the prevalence of dental fluorosis

Factors	Number with DF ^a (%)	Number without DF ^a (%)	OR ^b	CI ^c 95%	p-value
Age group					
6 – 8 years	26 (18.30)	42 (29.58)	1.00	-	-
9 – 12 years	17 (11.97)	57 (40.14)	2.24	1.02-5.03	0.0472 ^d
Age at which started self-teeth brushing					
Less than 3 years	9 (6.33)	41 (28.87)	2.54	1.07-6.47	0.0400 ^d
3 years or more	34 (23.94)	58 (40.85)	1.00	-	-
Age at which started to use mouthwashes					
Less than 3 years	3 (2.11)	18 (12.68)	1.00	-	-
3 years or more	40 (28.17)	81 (57.04)	0.23	0.05-0.80	0.0371 ^d
Frequency of red meat consumption					
Everyday	21 (14.78)	56 (39.43)	1.00	-	-
Less than 2 times per week	22 (15.49)	43 (30.28)	0.44	0.19-0.994	0.0524
Frequency of fruits consumption					
Everyday	18 (12.67)	23 (16.20)	1.00	-	-
Less than 2 times per week	25 (17.61)	76 (53.52)	2.74	1.19-6.44	0.0183 ^d

^a Dental fluorosis (Thylstrup and Fejerskov Index > 0)

^b Odds Ratio

^c Confidence Interval

^d P < 0.05; Logistic regression Walt test for coefficient significance

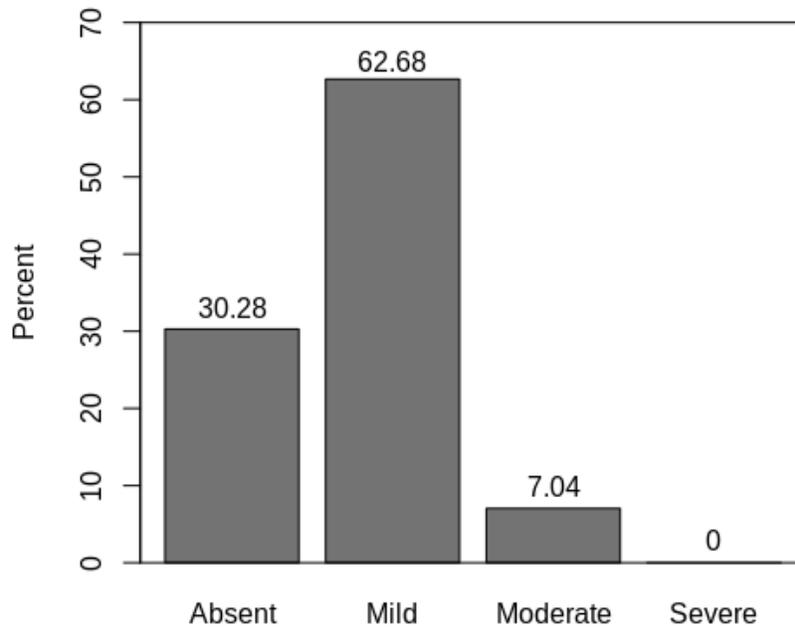


Figure 1. Prevalence and severity of dental fluorosis among schoolchildren

Appendix

ENCUESTA DE FACTORES DE RIESGO PARA FLUOROSIS DENTAL EN PADRES DE NIÑOS ESCOLARES EN CARTAGENA DE INDIAS

Características sociodemográficas:

Nombre _____ Edad: _____ Sexo: M ___ F ___

Régimen de seguridad social: contributivo ___ subsidiado ___ ninguno ___

Procedencia: urbana ___ rural ___

Nombre de EPS _____

Dirección residencia _____ Teléfono _____

El presente cuestionario contiene 16 ítems que indaga por los factores de riesgo para la fluorosis dental en sus hijos. Las preguntas permiten respuestas estructuradas de selección múltiple para elegir una sola respuesta. Es necesario completar todo el cuestionario para devolverlo al colegio con su hijo al día siguiente del envío.

Factores de riesgo para fluorosis dental en el niño

1. Tipo de agua de consumo durante los cuatro primeros años de vida.			2. Tipo de Leche consumida durante los primeros cuatro años de vida			
1.1 ¿El agua que su hijo consumió en sus primeros 4 años de vida fue: (marque con una X, puede marcar varias opciones)	a	Agua de la llave sin hervir	2.2 ¿Qué tipo de leche tomó su hijo durante los primeros 4 años de vida, además de la leche materna? (Marque con una X)	a	En polvo	
	b	Agua de la llave hervida		b	de cantina	
	c	Agua envasada		c	de bolsa	
	d	De Jagüey o pozo		d	leche de Soja	
	e	Agua filtrada	2.3 ¿Hasta qué edad tomó leche materna su hijo?	_____ (en meses)		
	f	Otra (Rio o quebrada)				
3. Tipo de alimentos consumidos con frecuencia por el menor						
3.4 ¿Qué tipo de alimentos consume su hijo habitualmente? (Marque con una x en el grupo de alimentos correspondientes a los que refiera el cuidador del niño(a) y la frecuencia. Puede marcar varias opciones)						
Grupo de Alimentos	A diario	1 a 2 veces a la semana	1 a la semana	Nunca		
Leguminosas (Alverjas, frijoles, lentejas, garbanzos, habichuelas)						
Cereales (arroz, avena, trigo, pan, cebada, maíz, arepas, galletas, tortas, pasteles, pastas, hojuelas de maíz)						

Verduras (Zanahoria, Papas, yuca, cebolla, remolacha, acelgas, apio, coliflor, repollos, espinacas, lechuga, calabacín, calabaza, pepino, pimiento, tomates)				
Lácteos (Leche, Yogurt, Kumis, queso, otros derivados)				
Carnes rojas (carne de res, cerdo, salchichas, jamón, mortadela)				
Pollo				
Pescado				
Frutas				
Mariscos (camarones, langostinos, calamares, pulpo)				
3.5. ¿Qué tipo de sal consume?	Sal refinada	Sal marina	Sal de ganado	Otra
3.6. Marca de sal que consume				

4. Exposición a productos de higiene bucal con alto contenido de fluoruros				
4.7. ¿Marca de la crema dental con la que su hijo se cepilla habitualmente?				
4.8. ¿A qué edad inicio a cepillarse su hijo los dientes con crema dental? (escriba la edad en años y luego clasifique marcando con una X el grupo de edad a la que inicio)	Años	a. Antes de los tres años		
		b. A los tres años o después		
4.9. ¿A qué edad su hijo se empezó a cepillarse los dientes sin acompañamiento de un adulto? : (escriba la edad en años y luego clasifique marcando con una X el grupo de edad a la que inicio)	Años	a. Antes de los tres años		
		b. A los tres años o después		
4.10. ¿Cuándo su hijo empezó a cepillarse los dientes usaba la misma crema dental de los adultos?		a. Si		
		b.No		
4.11. ¿Cuándo su hijo inicio a cepillarse los dientes, se tragaba la crema dental durante el cepillado?		a. Si		
		b.No		
4.12. ¿Cuántas veces al día se cepilla su hijo?	a. 1 vez	b. 2 veces	c. 3 veces	d. Más de 3 veces
4.13. ¿Cuánta crema dental aplica en el cepillo su hijo para cepillarse los dientes?:				
a. Una gota				
b. La mitad de la escobilla				

c. Toda la escobilla			
4.14. ¿Su hijo se enjuaga la boca con enjuagues bucales? (si contestó no conteste las preguntas 47 y 48)		a. Si	
		b. No	
4.15. ¿Desde qué edad su hijo usa enjuagues bucales? (escriba la edad en años y luego clasifique marcando con una X el grupo de edad a la que inicio)	Años	a. Antes de los tres años	
		b. A los tres años o después	
4.16. ¿Qué marca de enjuague bucal utiliza su hijo?			