

A study on the dental health status of children between 3 and 5 years old in Jeonju city



Heemin Kim, Jaegon Kim, Daewoo Lee, Yeonmi Yang

Department of Pediatric Dentistry and Institute of Oral Bioscience, School of Dentistry, Jeonbuk National University

INTRODUCTION

Dental caries is a prevalent chronic childhood disease that has a negative impact on the quality of life for both children and families. Considering it as a public health concern, we aim to analyze current oral health status of children with primary and early mixed dentition.

MATERIAL & METHOD

With parental consent, children between 3 and 5 years old from four kindergartens in Jeonju city were screened by two examiners. During intraoral examination, caries were detected through visual examination and Q-ray view which using the principle of Quantitative Light-induced Fluorescence (QLF). Based on this, the dmft (decayed-missing-filled-tooth) index was used to evaluate dental health status.

CONCLUSION

Increasing trend of dental caries is a growing concern, considering that the dmft rate was 68.5% in the 2018 Korean Children's Oral Health Survey. It highlights the significance of implementing early preventive measures for parents and caregivers. Therefore, regular dental checkup from young age with addressing these risk factors comprehensively is important in detecting and treating dental caries at proper time.

RESULTS

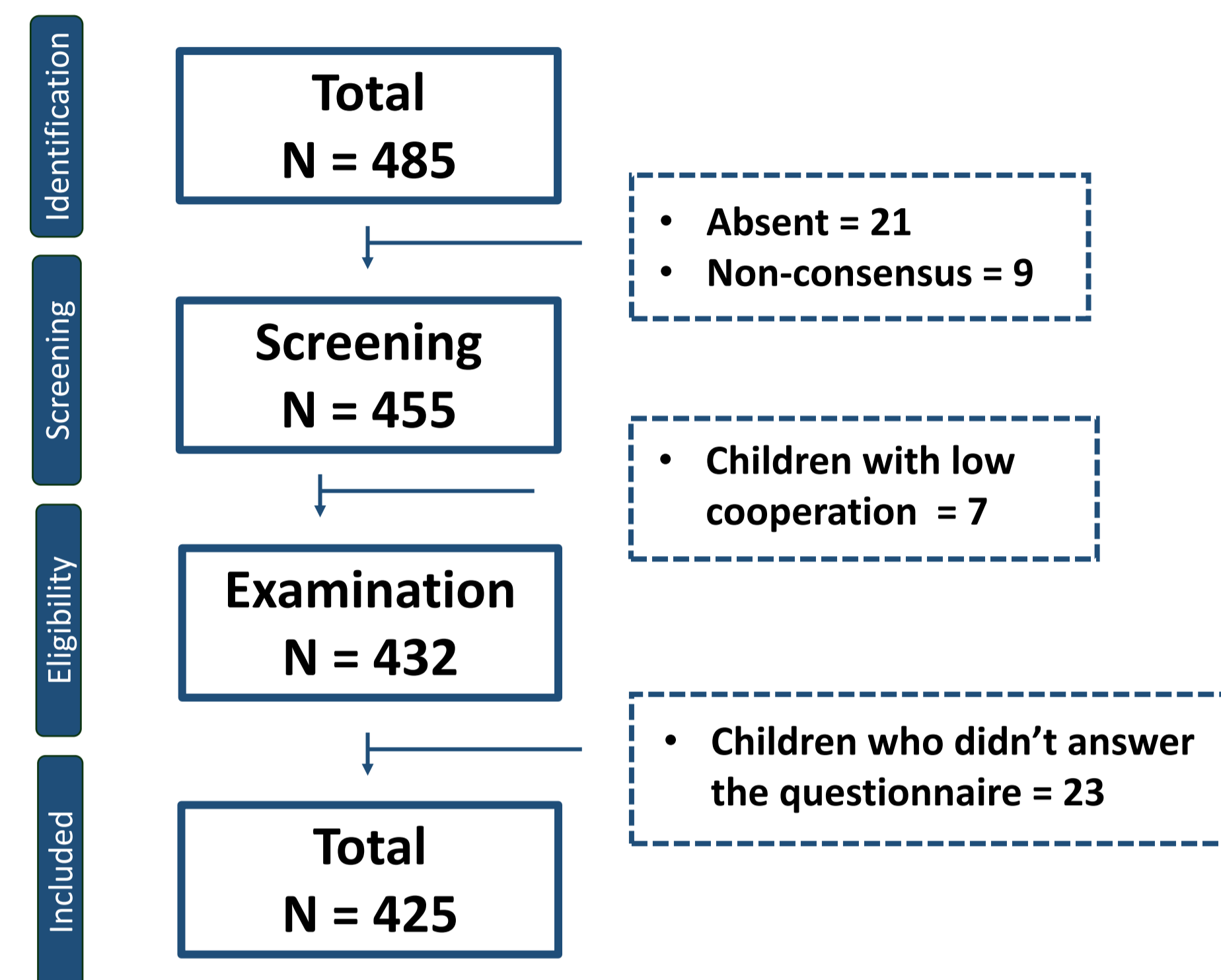


Fig. 1. Flow diagram of sample collection

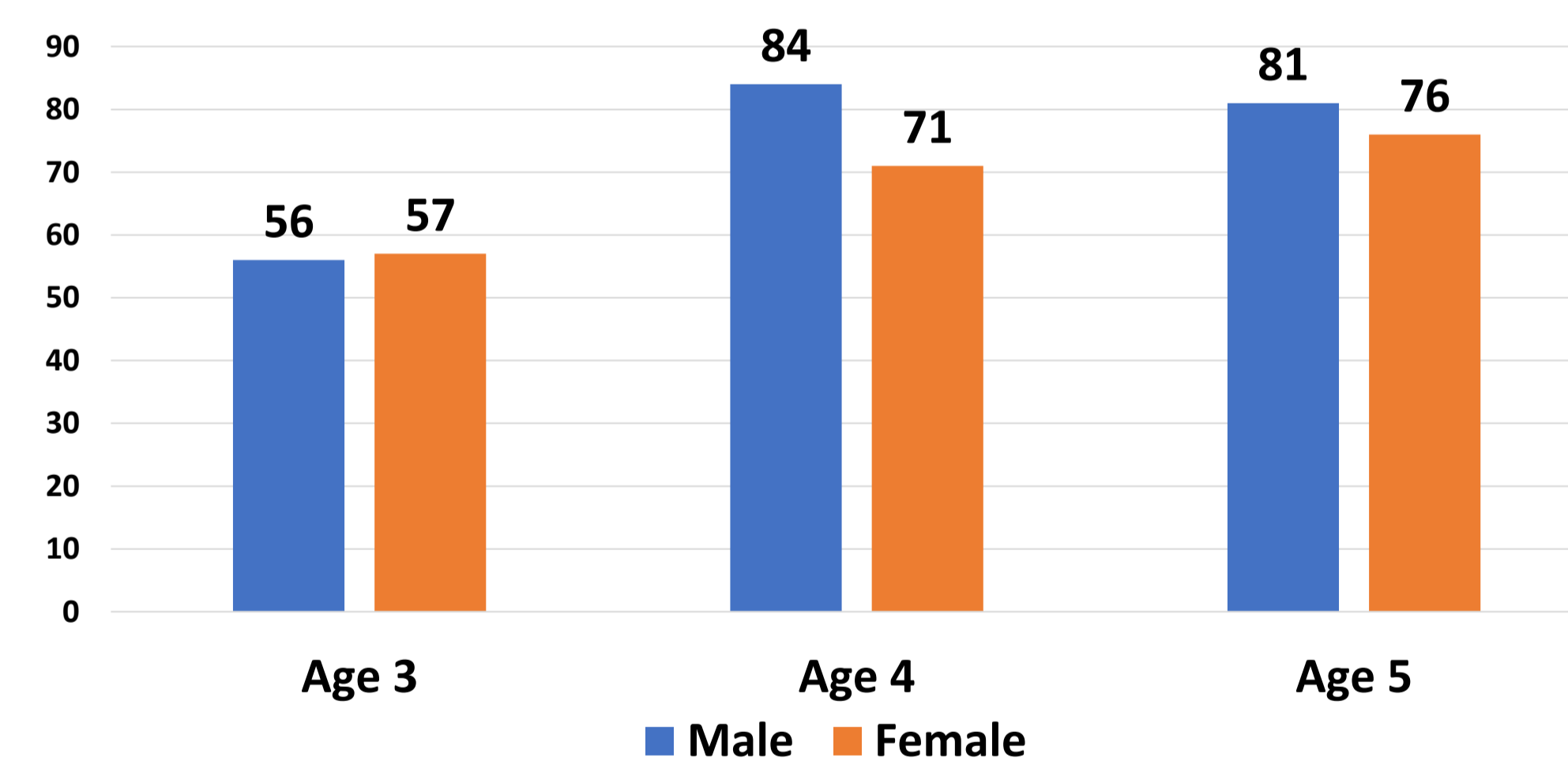


Fig. 2. Gender comparison according to age

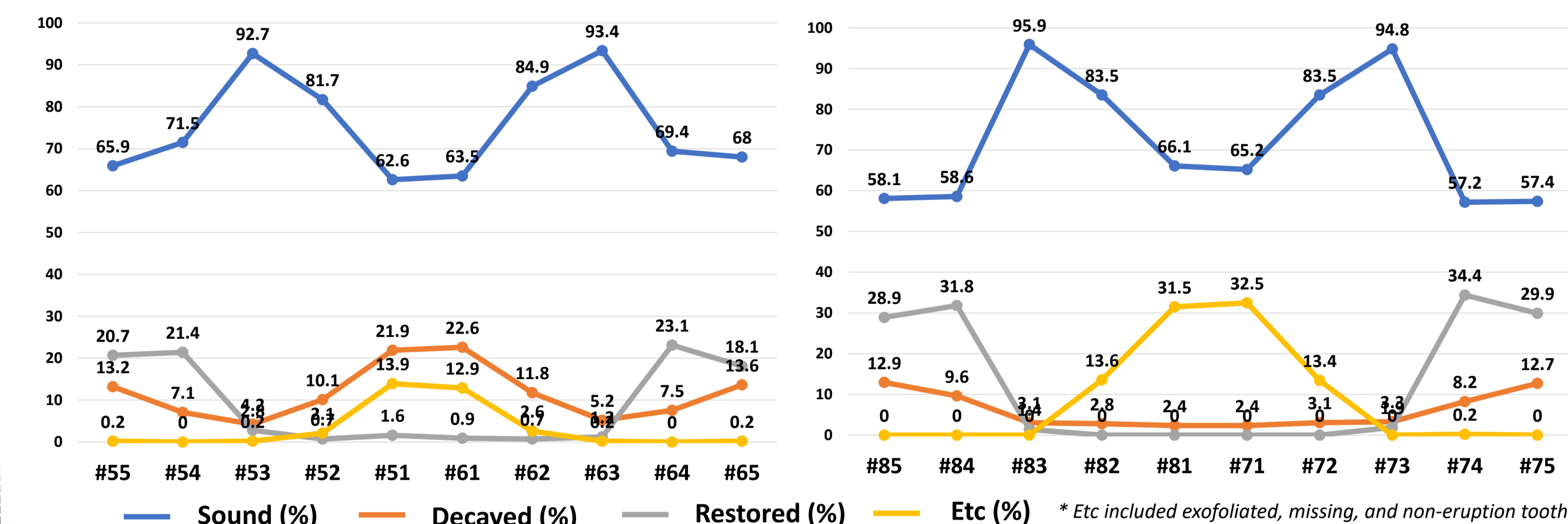


Fig. 3. Characteristics of dental status according to each dentition

Table 1. Status of dental caries by WHO criteria according to age and sex

(a) Age (b) Sex

Sex	Age	df rate ¹	dt rate ²	ft rate ²	Average number of teeth		
					dt index ²	ft index ²	dft index ²
Total	Total	72.4	9.3 ±13.0	12.2 ±16.6	1.78 ±2.50	2.20 ±2.91	3.97 ±4.11
	3	69.6	8.2 ±11.6	11.9 ±16.2	1.88 ±2.92	1.05 ±2.12	2.93 ±3.85
	4	75.4	10.6 ±14.3	12.6 ±17.1	1.92 ±2.41	2.05 ±2.90	3.97 ±4.26
	5	72.4	9.3 ±13.0	12.2 ±16.6	1.56 ±2.25	3.16 ±3.10	4.72 ±4.01
p-value		0.0007	0.6810	<.0001	0.4675	<.0001	0.0001

Age	Sex	df rate ¹	dt rate ²	ft rate ²	Average number of teeth		
					dt index ²	ft index ²	dft index ²
Total	Total	72.4	9.3 ±13.0	12.2 ±16.6	1.78 ±2.50	2.20 ±2.91	3.97 ±4.11
	Male	69.6	8.2 ±11.6	11.9 ±16.2	1.57 ±2.27	2.14 ±2.80	3.71 ±3.95
	Female	75.4	10.6 ±14.3	12.6 ±17.1	2.00 ±2.72	2.26 ±3.04	4.25 ±4.27
p-value		0.1806	0.0645	0.9280	0.0815	0.9993	0.1640

Table 2. Distribution of malocclusion and primary occlusal relationship in carious-free and caries-affected primary dentitions

(a) Malocclusion (b) Primary molar occlusal relationship

Malocclusion Primary dentition	N	Carious-free		Carious		p-value ¹
		n	(%)	n	(%)	
Crowding	50	44	(14.3)	6	(5.1)	0.0089
Spacing	34	21	(6.8)	13	(11.1)	0.1451
Deep bite	97	64	(20.8)	33	(28.2)	0.1033
Large overjet	27	18	(5.8)	9	(7.7)	0.4854
Anterior edge bite	17	9	(2.9)	8	(6.8)	0.0658
Anterior crossbite	31	24	(7.8)	7	(6.0)	0.5217
Posterior crossbite	9	7	(2.3)	2	(1.7)	0.7186
Unilateral posterior crossbite	6	5	(1.6)	1	(0.9)	0.5485
Midline deviation	32	27	(8.8)	5	(4.3)	0.1169

Type	Primary molar relationship		N	(%)
	Right side	Left side		
1	Flush terminal	Flush terminal	165	(41.0)
2	Mesial step	Mesial step	137	(34.1)
3	Distal step	Distal step	34	(8.5)
4	Flush terminal	Mesial step	23	(5.7)
5	Mesial step	Flush terminal	13	(3.2)
6	Distal step	Flush terminal	12	(3.0)
7	Flush terminal	Distal step	12	(3.0)
8	Distal step	Mesial step	3	(0.7)
9	Mesial step	Distal step	3	(0.7)