

Hygienic habits and the dental condition in 12-year-old children

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Abstract

Purpose: The aim of the study was the description of the dental condition of hygienic routines in 12-year-old children in urban and rural areas of Lublin voivodship.

Material and methods: The study comprised 274 children at the age of 12 (152 girls and 122 boys). 95 girls and 92 boys came from the urban area; 57 girls and 30 boys came from the rural area.

Results: On the basis of clinical examination it was concluded that 11.96% of boys and 18.95% of girls from the urban area and 6.67% boys and 8.77% of girls from the rural area brush their teeth after every meal; 60.87% of boys and 68.42% of girls from the urban area and 43.33% of boys and 50.88% of girls from the rural area brush their teeth twice; 22.83% of boys and 11.58% of girls from the urban area and 26.67% of boys and 28.07% of girls from the rural area brush their teeth once daily.

DMF count was for boys from the urban area – 4.12/girls – 3.92 and for boys from the rural area 4.50/girls – 4.29. The treatment indicator was for boys from the urban area – 0.56/girls – 0.47 and for boys from the rural area 0.35/girls – 0.67.

Conclusions: On the basis of the research conducted in the study, it was concluded that tooth brushing is more frequent with urban area children than in children from rural area. This leads to a conclusion that the action for improvement of the health awareness is a dire need among 12-year-olds both from urban and from rural areas.

Key words: 12-year-old children, dental condition, questionnaire.

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Introduction

Dental education is one of the prophylactic tasks aiming at increasing health awareness and motivation of pro-health actions in preserving of the health of the mastication organ. The knowledge pertaining to prophylaxis rules and the detailed information offered to different age groups of patients plays a crucial role in acquiring proper dental condition of the oral cavity [1-5].

Purpose

The aim of the study was the description of the dental condition of hygienic routines in 12-year-old children in urban and rural areas of Lublin voivodship.

Material and methods

The study comprised 274 children at the age of 12 (152 girls and 122 boys). 95 girls and 92 boys came from the urban area; 57 and 30 boys came from the rural area.

Clinical and questionnaire study were conducted. Clinical examination evaluated the state of dental condition while the questionnaire evaluated hygienic routines. The results obtained in the study were compared in subgroups by the application of Chi² independence test of Pearson.

Results

The results of the study are presented in *Tab. 1-6*.

In *Tab. 1* the data concerning the frequency of teeth brushing are collected. The application of Chi² independence test of Pearson (Chi² of Pearson's 33.3616, df=9, p=0.000116) allows describing the relevant differences in the teeth brushing frequency. The smallest frequency of tooth brushing is observed

Table 1. The frequency of toothbrushing express in %

	Boys – urban	Girls – urban	Boys – rural	Girls – rural
After every meal	11.96	18.95	6.67	8.77
Twice a day	60.87	68.42	43.33	50.88
Once a day	22.83	11.58	26.67	28.07
Less frequent	4.35	1.05	23.33	12.28

Table 2. The frequency of toothbrush exchanging in %

	Boys – urban	Girls – urban	Boys – rural	Girls – rural
Every 3 months	51.65	69.47	43.33	57.89
Every 6 months	24.18	13.68	23.33	17.54
After complete usage	24.18	16.84	33.33	24.56

in boys from the rural areas – 23.33% of boys brush their teeth no more than once, the highest frequency pertaining to toothbrushing was observed in girls from the urban area – 18.95% of girls brush their teeth after every meal and 68.42% of girls do it twice a day.

In *Tab. 2* the data reflect the frequency of exchanging the old toothbrush into a new one. The data signify the fact that the toothbrush is regularly exchanged every 3 months by 51.65% of boys and 69.47% of girls from the urban areas and 43.33% and 57.89% of girls from the rural areas. Basing on Chi² independence test of Pearson (Chi² of Pearson's 10.0344, df=6, p=0.123225) no significant differences were reported as for the frequency of exchanging toothbrushes among children from rural and urban areas.

Tab. 3, presents data concerning the duration of brushing. The application of Chi² independence test of Pearson (Chi² of Pearson's 45.7221, df=12, p=0.000008) allowed reporting significant differences in the duration of brushing. 3-minute brushing is common with 33.70% of boys and 46.32% of girls from the urban area and in 23.33% of boys and 22.81% of girls from the rural area. 1-minute brushing was observed in 8.70% of boys and 2.11% of girls from the urban area and in 23.33% of boys and 33.33% of girls from the rural area. Brushing duration is ignored by 27.17% of boys and 22.11% of girls from the urban area and in 20.00% of boys and 8.77% of girls from the rural area.

Tab. 4 presents the data concerned with the type of the toothbrush used for brushing. The application of Chi² independence test of Pearson (Chi² of Pearson's 55.2200, df=15, p=0.000002) allowed reporting significant difference as for the application of different toothbrushes. Traditional toothbrush was common with 75.0% of boys and 74.74% of girls from the urban area and with 96.67% of boys and 89.48% of girls from the rural areas, while the electric toothbrush was more common with urban area among children – 25.0% of boys and 23.16% of girls than in rural area – 3.33% of boys and 10.53% of girls.

Tab. 5 presents the data of application of additional means of dental hygiene of the oral cavity. It was stated that additional means of dental hygiene of the oral cavity are sometimes applied by 89.13% of boys and 95.79% of girls in the urban area and by 100% of boys and 92.98% of girls in the rural area. None of the

Table 3. Toothbrushing duration in %

	Boys – urban	Girls – urban	Boys – rural	Girls – rural
3 min	33.70	46.32	23.33	22.81
2 min	30.43	28.42	33.33	35.09
3 or 2 min	0.00	1.05	0.0	0.00
1 min	8.70	2.11	23.33	33.33
Don't know	27.17	22.11	20.0	8.77

Table 4. The use of traditional and electric toothbrush in %

	Boys – urban	Girls – urban	Boys – rural	Girls – rural
Traditional	75.0	74.74	96.67	89.48
Electric	25.00	23.16	3.33	10.53
Traditional and electric	0.00	1.05	0.00	0.00

Table 5. The application of additional means of dental hygienic

	Boys – urban	Girls – urban	Boys – rural	Girls – rural
Dental floss, liquid	7.32%	4.40%	0.00%	1.89%
Liquid	31.71%	36.26%	66.67%	69.81%
Dental floss	24.39%	38.46%	3.33%	11.32%
Toothpick	28.05%	9.89%	20.00%	15.09%
Dental floss, toothpick	3.66%	3.30%	0.00%	0.00%
Irrigator	1.22%	0.00%	0.00%	0.00%
Liquid, toothpick	3.66%	3.30%	10.00%	1.89%
Dental floss, liquid, toothpick	0.00%	4.40%	0.00%	0.00%

questioned children reported an everyday use of the additional means of dental hygiene. The application of Chi² independence test of Pearson (Chi² of Pearson's 59.4853, df=21, p=0.000015) allowed reporting significant differences in the percentage of children applying the additional means of dental hygiene. The most frequent means was the oral cavity cleansing and refreshing liquid applied by 31.71% of boys and 36.26% of girls from the urban areas and 66.67% of boys and 69.81% of girls from the rural areas, the least frequent means of dental hygiene was the irrigator applied only by 1.22% of boys from the urban areas.

Tab. 6 presents the data concerned with DMF count and its components D, M, F and the treatment indicator. The analysis of these data showed that DMF count was close in all research subjects and was 4.12 in boys and 3.92 in girls from the urban areas and 4.50 in boys and 4.29 in girls from the rural areas. However, there were the differences in the treatment indicator, which was for boys from the urban area – 0.56/girls – 0.47 and for boys from the rural area 0.35/girls – 0.67.

The frequency of dental caries among the studied group of youth was 73.91% in boys and 80.0% in girls from the urban area and 100% in boys and 78.95% in girls from the rural area.

Totally there was 1.09% of children at the age of 12 with the extracted permanent tooth due to caries; in the urban area the percentage for such cases was 1.09% in boys and 2.11% in girls while in the rural area the percentage was 2.11% in boys and 0% in girls.

Table 6. DMF count and treatment indicator

	Boys – urban	Girls – urban	Boys – rural	Girls – rural
D	1.73	2.01	3.0	1.48
M	0.01	0.02	0.0	0.0
F	2.55	1.9	1.5	2.80
DMF	4.12	3.92	4.50	4.29
F/D+F	0.56	0.47	0.35	0.67
The frequency of dental	73.91%	80.0%	100.0%	78.95%

Discussion

Mielnik-Błaszczak et al. studying 12-year-old children from the rural areas in Lublin voivodship in 1998 concluded that 2.9% brushed their teeth after every meal, 52.9% brushed their teeth twice a day, and 29.4% exchanged their old toothbrush. In our studies we stated that the greater percentage of children from the rural area brush their teeth after every meal, which is from 6.67% to 8.77%. There is also a greater number of children exchanging their old toothbrush every three months – from 43.33% to 57.89% [8].

We also found out in our studies that there exist a greater percentage of children applying additional means of dental hygiene as compared with the results of Mielnik-Błaszczak et al. However, when we compare the frequency of toothbrushing by 12-year-old children from Lublin and Łódź area [9] we find out that in Łódź toothbrushing is common with 57% of children who do it twice a day and with 37% of children who do it once a day and 6% who do it rarely. In Lublin the data were as follows: 64.71%, 17.11% and 2.67%. When one compares the intensity of dental caries, however, it was found out that in boys in Łódź the DMF count was 3.38 and in girls – 2.63 as compared to Lublin 4.12 and 3.92.

The study of the children from urban and rural area from Mazovian voivodship, similarly to our findings, showed the absence of greater differences between children from rural and urban areas as for DMF count and also between the boys and girls [10]. Similar findings were achieved by Bachanek et al. who studied 12-year-olds children from the former Chełm voivodship [11]. The mean value of DMF count in our study – from 3.92 to 4.50 is within the norm for “mild intensification” of dental caries and is close to the count of mean DMF count for 12-year-old children in Poland [12]. Similarly as in the general studies for Poland, higher values of DMF in rural area children were stated as compared to urban area, there was a smaller percentage of 12-year-old children with an extracted tooth due to dental caries [12].

Conclusions

1. Tooth brushing is more common in urban areas children than in rural areas children.
2. Brushing is more common among girls than boys.
3. The highest treatment indicator was reported in girls from the rural areas and the lowest in boys from rural areas.
4. The proper action aimed at intensification of health awareness in 12-year-old children is needed in both rural and urban areas.

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