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An evaluation of health consciousness and hygienic habits concerning the masticatory organ in lightly and mildly mentally handicapped young people aged 17 to 23 years

In his dental practice, a dental surgeon deals with patients afflicted with different morbid states. Mental handicap is one of them. It denotes a general functioning of the intellect on a level significantly lower than average, and refers to such aspects of personality as puberty, learning, and social adaptation. A light degree of mental handicap is demonstrated by the intelligence quotient of 52–67. In the case of mild mental handicap the functioning of the intellect is on an even lower level ranging from 36 to 51 (1, 2).

The most typical symptom of light mental handicap is abnormal mental development within such functions as perception, thinking, memory, attention, and social orientation.

Typical disorders of the dynamics of nervous processes in mildly and significantly mentally handicapped individuals include psychomotor overactivity and psychomotor instability. Mildly and significantly mentally handicapped persons also demonstrate an impairment of memory. Their memory is characterized by: – a significant decrease in the accuracy of reported phenomenon, – short term, – a slow pace of memorizing, – poor readiness of recalling, – a narrow range (small number of facts which can be remembered) (5).

The mental limitations mentioned above make the doctor–patient relationship difficult, including the taking of adequate dental history. Health consciousness concerning oral hygiene and proper diet plays a considerable role in maintaining a healthy status of the masticatory system. Adhering to the basic principles of oral hygiene, concerning the frequency of brushing, selecting an adequate brushing method, the use of optimal brush and toothpaste type, as well as additional hygienic procedures, is vital for the maintenance of oral tissues in the physiological state of integrity. Complying with a healthy and nutritionally optimal model of diet is of no less importance (4, 7).

The aim of the study was to compare health consciousness related to oral hygiene and dietary habits in young people with light and mild mental handicaps before and after oral hygiene instruction.

MATERIAL AND METHODS

The questionnaire survey was conducted in the Educational Centre for Mentally Handicapped Children in Lublin. It was performed in two stages. In the first stage (Stage I) a group of 100 young people aged 17 to 23 years was examined, consisting of 49 girls and 51 boys. Within the studied population, 70 young people came from the country and 30 lived in a town. In the second stage (Stage II), which took place 6 months later, 50 individuals were examined, i.e. 25 girls and 25 boys. Thirty-eight people came from the country and 12 came from a town.

The first stage of the survey was preceded by instruction on the role of diet and proper oral hygiene in dental caries prevention. The second stage of the study was not preceded by instruction and its aim was to evaluate the degree of health consciousness concerning oral health. The questionnaire form consisted of 13 questions adjusted to the participants' intellectual level. The questionnaire was completed by the participants themselves under their educators' supervision. Both stages of the study used the same questionnaire.

RESULTS

Table 1A. Brushing frequency in the studied group. Stage I

Brushing frequency	Total %	Girls %	Boys %	Town %	Country %
Twice a day	49	57.2	41.2	43.3	51.4
Once a day	19	10.2	27.5	16.7	20.0
More than twice a day	17	16.3	17.6	23.3	14.3
Less than once a day	15	16.3	13.7	16.7	14.3

In Stage I the majority of the studied group (49%) brushed their teeth twice daily, 19% brushed their teeth once a day, 17% brushed more than twice a day, and 15% of the respondents brushed their teeth less than once daily. Differences in brushing frequency depending on sex and dwelling place are presented in Table 1A.

Table 1B. Brushing frequency in the studied group. Stage II

Brushing frequency	Total %	Girls %	Boys %	Town %	Country %
Twice a day	60.0	68.0	52.0	58.0	58.0
Once a day	20.0	16.0	24.0	17.0	24.0
More than twice a day	18.0	12.0	24.0	25.0	16.0
Less than once a day	2.0	4.0	0.0	0.0	2.0

Stage II of the study revealed that most respondents (60%) brushed their teeth twice a day, whereas 20% brushed once daily, 18% of the studied group brushed their teeth more than twice daily, and only 2% brushed less than once a day. Differences in brushing frequency depending on sex and dwelling place are presented in Table 1B.

Table 2A. Most common brushing method. Stage I

Brushing method	Total %	Girls %	Boys %	Town %	Country %
Circular strokes	59.0	69.4	49.0	63.3	57.1
Scrubbing motion	27.0	18.4	35.3	20.0	30.0
Incidental	14.0	12.2	15.7	16.7	12.9

In Stage I most of the boys and girls (59%) used circular strokes while brushing, 27% of them did their brushing with scrubbing motion, and 14% did not pay attention to the character of motion while brushing. Differences concerning the most frequently selected brushing method in relation to sex and dwelling place are shown in Table 2A.

Table 2B. Most common brushing method. Stage II

Brushing method	Total %	Girls %	Boys %	Town %	Country %
Circular strokes	54.0	60.0	48.0	67.0	47.0
Scrubbing motion	32.0	32.0	32.0	25.0	42.0
Incidental	14.0	8.0	20.0	8.0	11.0

In Stage II the majority of the studied group (54%) used circular strokes while brushing their teeth, 32% used scrubbing motion, and 14% did the brushing with incidental motion. Differences concerning the most frequently selected brushing method in relation to sex and dwelling place are shown in Table 2B.

Table 3A. Frequency of toothbrush replacement. Stage I

Frequency of toothbrush replacement	Total %	Girls %	Boys %	Town %	Country %
Every 3 months	40.0	42.9	37.3	40.0	40.0
Every 6 months	16.0	16.3	15.7	13.3	17.2
Less than every 6 months	21.0	22.4	19.6	20.0	21.4
When totally worn out	23.0	18.4	27.4	26.7	27.4

In Stage I of the study the frequency of toothbrush replacement was as follows: most respondents (40%) replaced their toothbrush every 3 months, 16% replaced the toothbrush every 6 months, and 21% replaced it less than every 6 months. 23% of the studied population changed their toothbrush when it was totally worn out. Differences in the frequency of toothbrush replacement depending on sex and dwelling place are demonstrated in Table 3A.

Table 3B. Frequency of toothbrush replacement. Stage II

Frequency of toothbrush replacement	Total %	Girls %	Boys %	Town %	Country %
Every 3 months	18.0	12.0	24.0	17.0	18.0
Every 6 months	36.0	36.0	36.0	50.0	24.0
Less than every 6 months	22.0	32.0	12.0	17.0	29.0
When totally worn out	14.0	20.0	28.0	16.0	29.0

Stage II of the study revealed that most young people (36%) replaced their toothbrush every 6 months. 18% of them replaced toothbrushes every 3 months, 22% replaced them less than every 6 months, while 14% changed toothbrushes only when they were totally worn out. Differences in the frequency of toothbrush replacement depending on sex and dwelling place are demonstrated in Table 3B.

Table 4A. Kind of toothpaste used. Stage I

Kind of toothpaste used	Total %	Girls %	Boys %	Town %	Country %
A fluoride toothpaste	67.0	81.6	52.9	60.0	70.0
A non-fluoride toothpaste	8.0	6.1	9.8	13.3	5.7
Any toothpaste	25.0	12.3	37.3	26.7	24.3

Stage I demonstrated that most subjects used a fluoride toothpaste while brushing (67%), 8% used a non-fluoride toothpaste, and 25% did not pay attention to the content of fluoride in the toothpaste they used. Differences in the kinds of toothpastes used with reference to sex and dwelling place are presented in Table 4A.

Table 4B. Kind of toothpaste used. Stage II

Kind of toothpaste used	Total %	Girls %	Boys %	Town %	Country %
A fluoride toothpaste	74.0	76.0	72.0	100.0	71.0
A non-fluoride toothpaste	8.0	8.0	8.0	0.0	5.0
Any toothpaste	18.0	16.0	20.0	0.0	24.0

Stage II of the study showed that the majority of the subjects (74%) used a toothpaste with fluoride for brushing their teeth, 8% used a non-fluoride toothpaste, and 18% did not pay attention to the content of fluoride in the used toothpaste. Differences in the kinds of toothpastes used with reference to sex and dwelling place are presented in Table 4B.

Table 5A. Use of additional oral hygiene aids. Stage I

Use of additional oral hygiene aids	Total %	Girls %	Boys %	Town %	Country %
No	79.0	69.4	88.2	73.3	81.4
Yes	21.0	30.6	11.8	26.7	18.6

One of the questions in the questionnaire referred to the kinds of additional oral hygiene aids used by the respondents, but the obtained answers did not contain any relevant information. On the basis of the obtained data, it was concluded that 79% of the subjects did not use additional oral hygiene aids. Differences in the use of additional oral hygiene aids depending on sex and dwelling place are demonstrated in Table 5A.

Table 5B. Use of additional oral hygiene aids. Stage II

Use of additional oral hygiene aids	Total %	Girls %	Boys %	Town %	Country %
No	76.0	72.0	80.0	67.0	84.0
Yes	24.0	28.0	20.0	33.0	16.0

The results of Stage II of the study show that 76% of the subjects do not use any additional oral hygiene aids. Differences in the use of additional oral hygiene aids depending on sex and dwelling place are demonstrated in Table 5B.

Table 6A. Frequency of dental visits. Stage I

Frequency of dental visits	Total %	Girls %	Boys %	Town %	Country %
Every 6 months	26.0	22.4	29.4	33.3	22.8
Every 12 months	18.0	24.5	11.8	6.7	22.8
In case of pain	56.0	53.1	58.8	60.0	54.4

Stage I of the survey showed that most subjects (56%) arranged a dental visit in case of pain, 26% visited a dentist every 6 months, and 18% every 12 months. Differences in dental visit frequency depending on sex and dwelling place are demonstrated in Table 6A.

Table 6B. Frequency of dental visits. Stage II

Frequency of dental visits	Total %	Girls %	Boys %	Town %	Country %
Every 6 months	34.0	40.0	28.0	33.0	26.0
Every 12 months	6.0	4.0	8.0	8.0	8.0
In case of pain	60.0	56.0	64.0	59.0	66.0

The questionnaire survey conducted in Stage II of the study revealed that most respondents (60%) visited a dental practitioner only in case of a toothache, 34% arranged a check-up every 6 months, and 6% every 12 months. Differences in dental visit frequency depending on sex and dwelling place are demonstrated in Table 6B.

Table 7A. Frequency of sweets consumption. Stage I

Sweets consumption	Total %	Girls %	Boys %	Town %	Country %
Every day	77.0	69.4	84.3	76.7	77.1
Not at all	23.0	30.6	15.7	23.3	22.9

It turned out in Stage I of the study that 77% of the subjects consumed sweets every day, and 23% did not consume sweets. Differences in sweets consumption between sexes and depending on dwelling place are presented in Table 7A.

Table 7B. Frequency of sweets consumption. Stage II

Sweets consumption	Total %	Girls %	Boys %	Town %	Country %
Every day	86.0	88.0	84.0	83.0	95.0
Not at all	14.0	12.0	16.0	17.	5.0

In Stage II it was revealed that 86% of the studied population consumed sweets daily and 14% did not eat sweets at all. Differences in sweets consumption between sexes and depending on dwelling place are presented in Table 7B.

Table 8A. Vegetable and fruit consumption. Stage I

Vegetable and fruit consumption	Total %	Girls %	Boys %	Town %	Country %
Daily	57.0	61.2	52.9	53.3	58.6
Less often	43.0	38.8	47.1	46.7	41.4

57% of the group consumed vegetables and fruit every day, and 43% less often than every day. Differences in vegetable and fruit consumption depending on sex and dwelling place are presented in Table 8A.

Table 8B. Vegetable and fruit consumption. Stage II

Vegetable and fruit consumption	Total %	Girls %	Boys %	Town %	Country %
Daily	78.0	44.0	72.0	75.0	66.0
Less often	22.0	56.0	28.0	25.0	34.0

In Stage II of the survey 78% consumed vegetables and fruit every day, and 22% consumed these foods less often. Differences in vegetable and fruit consumption depending on sex and dwelling place are presented in Table 8B.

Table 9A. Consumption of milk and dairy products. Stage I

Milk and dairy products consumption	Total %	Girls %	Boys %	Town %	Country %
Daily	48.0	51.0	45.1	50.0	47.1
Less often	52.0	49.0	54.9	50.0	52.9

It turned out in Stage I that 48% of the respondents consumed milk and dairy products daily, whereas 52% consumed these less often than every day. Differences in milk and dairy products consumption depending on sex and dwelling place are presented in Table 9A.

Table 9B. Consumption of milk and dairy products. Stage II

Milk and dairy products consumption	Total %	Girls %	Boys %	Town %	Country %
Daily	36.0	20.0	52.0	50.0	34.0
Less often	64.0	80.0	48.0	50.0	66.0

36% of the respondents declared daily consumption of milk and dairy products, whereas 64% consumed milk and dairy products less often. Differences in milk and dairy products consumption depending on sex and dwelling place are presented in Table 9B.

DISCUSSION

In the prevention of dental caries the role of health-promoting activities in the form of instruction on oral hygiene, the proper diet, the importance of fluoride and regular dental check-ups cannot be overestimated.

Questionnaire surveys carried out in two stages made it possible to determine the level of health consciousness concerning the masticatory system and hygienic habits in young people with light and mild mental handicaps aged 17 to 23 years.

Stage I of the survey revealed that the majority of the surveyed were familiar with the basic correct habits concerning oral hygiene. It is worth pointing out that most of those surveyed (79%) do not know nor use additional oral hygiene aids. It is extremely alarming that most respondents consult a dentist only in case of need. Also the nutritional habits of the surveyed group consisting in frequent sweets consumption must be considered very harmful.

Proper dietary habits involving frequent consumption of milk and dairy products, as well as of fruit and vegetables were found in about half of those surveyed. The study demonstrated that the girls more often than the boys used the right brushing method (i.e. circular strokes): 69.4% and 49.0%, respectively. It was noted that a smaller percentage of girls (18.4%) declared toothbrush

replacement after it had been totally worn out, compared with boys (27.4%) in the study group. Selection of a fluoride toothpaste was declared by 81.6% of the girls, and only 52.9% of the boys. Girls also attach a greater importance to the use of additional oral hygiene aids (30.6%). It was noted that a larger percentage of girls (51%) consumed milk and dairy products daily.

It is worth noting that knowledge of the basic principles concerning maintenance of oral health is similar in the studied group in both those living in a town and those living in the country. Yet a larger percentage of young people from urban areas keeps to a correct model of diet.

Stage II of the questionnaire surveys, conducted after 6 months and not preceded by instruction on the basic principles of maintenance of oral hygiene, did not reveal any significant improvement. The results obtained in Stage II showed that the number of those brushing their teeth twice a day increased by 11%, but the number of subjects who chose the appropriate method of circular strokes dropped by 5% in favour of any method. In Stage II the number of those surveyed who replaced toothbrushes every 3 months rose by 22%. Stage II confirmed the earlier results pointing to the lack of necessity on the part of the young people to use additional oral hygiene aids, or to visit a dentist regularly. Stage II did not reveal any improvement in dietary habits.

An analysis of the above data may lead to an assumption that the level of consciousness concerning oral hygiene and proper dietary habits in the studied group is not significantly different from that of similar groups of mentally handicapped young people surveyed in other research centres (4, 6, 7). Mielnik-Błaszczak et al. obtained similar results concerning the frequency of teeth brushing in a group of special-needs youth (3).

CONCLUSIONS

1. The questionnaire surveys revealed a poor knowledge of the basic methods concerning maintenance of oral hygiene in those surveyed.
2. Inadequate dietary habits in the studied group deserve consideration.
3. Consciousness related to oral hygiene and dietary habits was higher in the surveyed girls than in the boys.
4. The knowledge of the basic principles of oral hygiene was similar in young people living in a town and those living in the country, but those from urban areas were more familiar with the basics of proper diet.
5. It was noted in the course of the study that young people with light and mild mental handicaps showed a poor capability of assimilating and memorizing information.
6. Youth with mental handicaps should be treated as a special-needs group and included in particular preventive and therapeutic care involving more frequent prophylactic tests.

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SUMMARY

The questionnaire surveys conducted in a group of young people with light and mild mental handicaps aimed to evaluate health consciousness and hygienic habits concerning the masticatory organ. The surveys were conducted in two stages: Stage I including a group of 100 young people was preceded by oral hygiene instruction, and Stage II including a group of 50 was carried out after 6 months and not preceded by instruction. The results of the study point to a poor knowledge concerning oral hygiene maintenance in the subjects and a low capability to assimilate and memorize information.

Ocena stanu świadomości zdrowotnej oraz nawyków higienicznych dotyczących narządu żucia u młodzieży 17–23-letniej z lekkim i umiarkowanym stopniem upośledzenia umysłowego

Badania ankietowe przeprowadzone wśród młodzieży z lekkim i umiarkowanym upośledzeniem umysłowym miały na celu ocenę świadomości zdrowotnej oraz nawyków higienicznych dotyczących narządu żucia. Przeprowadzono je w dwóch etapach. I etap obejmujący grupę 100-osobową poprzedzony był instruktażem higieny jamy ustnej, a II etap obejmujący grupę 50-osobową, przeprowadzony po 6 miesiącach, nie był poprzedzony wykładem. Wyniki badań wykazały małą znajomość podstawowych metod utrzymania higieny jamy ustnej u badanych oraz niską zdolność przyswajania i zapamiętywania informacji.