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Stomatologiczne nawyki pro-zdrowotne pełnoletnich uczniów szkół specjalnych – badanie socjomedyczne rodziców/opiekunów

Streszczenie

Wstęp. Pacjenci niepełnosprawni i z niektórymi chorobami ogólnoustrojowymi mają często trudności z utrzymaniem higieny jamy ustnej na właściwym poziomie ze względu na zmniejszone zdolności manualne, brak zrozumienia konieczności systematycznego szczotkowania zębów czy też brak pomocy rodziców/opiekunów przy przeprowadzaniu tej czynności. Również nawyki dietetyczne w tej populacji pacjentów nie są zadowalające.

Cel. Celem pracy była ocena stomatologicznych zachowań prozdrowotnych pełnoletnich uczniów poznańskich szkół specjalnych na podstawie badania socjomedycznego przeprowadzonego wśród ich rodziców/opiekunów.

Materiał i metody. Badaniem objęto 65 osób, rodziców lub opiekunów uczniów niepełnosprawnych intelektualnie, w wieku 19-24 lat, uczęszczających do szkół specjalnych na terenie miasta Poznania. Zamknięte pytania dotyczyły częstości mycia zębów oraz samodzielności w wykonywaniu tej czynności, rodzaju używanej szczoteczki i płukanek, gumy do żucia oraz nici dentystycznej, a także konieczności stosowania u dziecka specjalnej diety, preferowanej konsystencji pokarmów, spożywania przekąsek pomiędzy posiłkami i po wieczornym myciu zębów.

Wyniki. Stosunkowo wysoki odsetek rodziców/opiekunów (81,6%) podał, iż ich dzieci myją zęby częściej niż 1 raz dziennie, a samodzielnie zabieg ten wykonywało 66,2%. W większości (73,8%) uczniowie używali jedynie z tradycyjnej szczoteczki do zębów. Płyny do płukania jamy ustnej stosowało jedynie 13,8%, gumy do żucia 40,0%, natomiast nici dentystyczne 6,2%. Znaczny odsetek spożywał przekąski zarówno pomiędzy posiłkami (70,7%) jak i po wieczornym myciu zębów (36,9%). Jedynie u 6,2% uczniów była stosowana specjalna dieta, podczas gdy 35,4% preferowało pokarmy o konsystencji miękkiej, a 4,6% pokarmy twarde.

Wnioski. Przeprowadzone badania wskazują, iż konieczna jest poprawa zachowań prozdrowotnych dorosłych uczniów szkół specjalnych w zakresie higieny jamy ustnej oraz diety. Wskazane jest opracowanie programów edukacyjnych, z zakresu profilaktyki chorób jamy ustnej, skierowanych do ich rodziców/opiekunów, wychowawców i personelu medycznego w szkołach specjalnych.

Słowa kluczowe: uczniowie, niepełnosprawni intelektualnie, higiena, dieta.

Dental prevention habits in adults attending special-care schools. A questionnaire study of parents/caregivers

Abstract

Introduction. Patients with disabilities and certain systemic diseases often have difficulties in maintaining oral hygiene at an appropriate level due to reduced manual dexterity, lack of understanding of the need of regular tooth brushing as well as that of support of parents/ caregivers in carrying out this procedure. Moreover, dietary habits in this population are not satisfactory.

Aim. The study aimed at evaluating dental prevention habits in adult students from special-care schools in Poznan on the basis of a questionnaire study of their parents/caregivers.

Material and methods. The study covered 65 people, parents or caregivers of intellectually disabled students, aged 19-24 years, attending special-care schools in Poznan. The closed questions concerned tooth brushing frequency, self-dependence in teeth cleaning, the kind of toothbrush, the use of mouthrinse, chewing gum as well as dental floss and the need to keep a special diet, the preferred texture of foods, snacking between meals and after evening tooth brushing.

Results. A high percentage of parents/caregivers (81.6%) declared that their children clean the teeth more than once daily and 66.2% of the children were self-dependent in this respect. Most of the children (73.8%) used only the traditional manual toothbrush. Mouthrinse was used only by 13.8%, chewing gum by 40.0%, while dental floss by 6.2% of disabled students. Most children snacked between meals (70.7%) and after the evening tooth brushing (36.9%). Only 6.2% of students used a special diet, 35.4% preferred soft food, whereas 4.6% preferred solid food.

Conclusions. The study revealed a need for improvement of hygienic and dietary habits in adult special-care students. It would be advisable to set up educational programs for the prevention of oral diseases targeted at their parents/caregivers, teachers as well as health professionals in special-care schools.

Key words: students, intellectually disabled, hygiene, diet.

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INTRODUCTION

Patients with disabilities and certain systemic diseases often have difficulties in maintaining oral hygiene at an appropriate level. However, it has been known for many years that bacteria of dental plaque, not being systematically removed during hygienic procedures cause, inter alia, dental caries and gum disease [1] that in disabled patients are also quite widely reported [2,3]. Moreover, poor oral health has an impact on the course of systemic diseases [4]. Hence, it is emphasized that there is a need to motivate patients to carry out hygienic measures regularly. This problem also applies to patients fed via a tube, because despite the lack of contact of the food with the oral cavity, tooth surfaces also accumulate bacterial deposits [1].

Literature data also indicate that disabled persons do not have proper, from the dentist's point of view, dietary habits. It happens that parents do not supervise the quality of food consumed by their children, especially between meals or they offer sweets as a reward [5].

School environment is conducive to education and the behaviors associated with personal hygiene and proper diet. It is expected that the long-term educational activities for appropriate healthy habits carried out in a school environment should bring positive results. Foreign authors describe the successes in this regard in their publications [6].

AIM

The study aimed at evaluating dental prevention habits in adult students from special-care schools in Poznan on the basis of a questionnaire study of their parents/caregivers.

MATERIAL AND METHODS

A questionnaire study was carried out in the school year 2006/2007 among the parents or caregivers of intellectually disabled students, aged 19-24 years, from special schools in the city of Poznan. Such schools are attended by children with varying degrees of intellectual disability (from mild to profound), including those aged over 18 years of age. The data obtained from all such educational establishments in Poznan showed that 1091 students attended them in the school year 2006/2007, including 239 persons ≥ 19 years of age.

Prior to the research, the way of its conductance was discussed with the heads of each school. Then, teachers provided the information to parents or caregivers of students with a questionnaire. Finally, a questionnaire was filled in by parents/caregivers of 65 students (28 females and 37 males, including 10 mildly disabled, 29 moderately disabled, 19 severely disabled and 7 profoundly disabled) (Table 1).

The closed-ended questions concerned tooth brushing frequency, self-dependence with teeth cleaning, the kind of toothbrush, the use of mouthrinse, chewing gum as well as dental floss and the need of use of a special diet, the preferred texture of foods, snacking between meals and after evening tooth brushing.

Because of potentially greater abilities of students with lower degrees of disability to self-service and self-performing of many activities, the results were presented with division of subjects into 2 categories: mildly and moderately intellectually disabled as well as severely and profoundly intellectually disabled.

The research was approved by the Ethical Committee of the Poznan University of Medical Sciences (Resolution No. 783/06).

RESULTS

A high percentage of parents/caregivers (81.6%) declared that their children cleaned the teeth more than once daily (79.3% of mildly and moderately disabled and 84.6% of severely and profoundly disabled), whereas 12.4% of students carried out this measure only from two to six times per week, while others even less frequently. However, 66.2% of students were self-dependent in tooth brushing and only 24.6% of parents/caregivers always helped them with this activity. In the group of severely and profoundly disabled, 61.6% of students always cleaned their teeth with the help of parents/caregivers whereas sometimes as much as 11.5%. Moreover, in the group of mildly and moderately disabled only 7.7% of students got such an assistance from time to time. Most students (73.8%) used only the traditional manual toothbrush (76.9% of mildly and moderately disabled as well as 69.3% of severely and profoundly disabled), while 6.2% of them used only electric toothbrush and 16.9% both kinds of toothbrushes interchangeably. Mouthrinse was used only by 13.8% of students, including 10.7% after tooth brushing and 3.1% at other times and those were mainly mildly and moderately disabled. The answers demonstrated that chewing gum, considered as a preventive action, was seen in 40.0%, while dental floss was used by 6.2% of disabled students (Table 2).

Most children snacked between meals (70.7%) and after the evening tooth brushing (36.9%). In a slightly higher percentage the mildly and moderately disabled consumed snacks more frequently. On the question of preferences in a kind of food consumed, 35.4% of parents or caregivers reported that their children preferred soft foods while 4.6%

TABLE 1. Number of children with respect to their gender and degree of intellectual disability whose parents answered to the questionnaires.

Degree of intellectual disability	Females		Males		Total		Total	
	N	%	N	%	N	%	N	%
Mild	2	3.1	8	12.3	10	15.4	39	60.0
Moderate	13	20.0	16	24.6	29	44.6		
Severe	10	15.4	9	13.8	19	29.2	26	40.0
Profound	3	4.6	4	6.2	7	10.8		
Total	28	43.1	37	56.9	65	100.0	65	100.0

solid. Much more often, soft foods were preferred by the severely and profoundly disabled (53.9%). For a high percentage of respondents (49.2%) it was difficult to answer to this question (Table 3).

TABLE 2. Answers of parents/caregivers to the questions concerning hygienic habits of their children.

Question	Degree of intellectual disability				Total	
	mild and moderate		severe and profound			
	N	%	N	%	N	%
Number of examined in groups	39	100.0	26	100.0	65	100.0
How often does the child clean the teeth?: - more than once daily	31	79.3	22	84.6	53	81.6
- 2-6 times per week	4	10.3	4	15.4	8	12.4
- once per week	1	2.6	0	0.0	1	1.5
- less than once per week	1	2.6	0	0.0	1	1.5
- not sure	1	2.6	0	0.0	1	1.5
- no answer	1	2.6	0	0.0	1	1.5
Does the child clean the teeth: - by himself/herself	36	92.3	7	26.9	43	66.2
- parent/caregiver always helps with brushing	0	0.0	16	61.6	16	24.6
- parent/caregiver sometimes helps with brushing	3	7.7	3	11.5	6	9.2
What kind of toothbrush is used?: - traditional	30	76.9	18	69.3	48	73.8
- electric	3	7.7	1	3.8	4	6.2
- traditional and electric	4	10.3	7	26.9	11	16.9
- no answer	2	5.1	0	0.0	2	3.1
Does the child use mouthrinse? - after toothbrushing	5	12.8	2	7.7	7	10.7
- at other times	2	5.1	0	0.0	2	3.1
- no	28	71.8	23	88.5	51	78.5
- no answer	4	10.3	1	3.8	5	7.7
Does the child use dental floss? - yes	4	10.3	0	0.0	4	6.2
- no	35	89.7	26	100.0	61	93.8
Does the child use chewing gum? - yes	23	59.0	3	11.5	26	40.0
- no	16	41.0	23	88.5	39	60.0

TABLE 3. Answers of parents/caregiv ers to the questions concerning dietary habits of their children.

Question	Degree of intellectual disability				Total	
	mild and moderate		severe and profound			
	N	%	N	%	N	%
Number of examined in groups	39	100.0	26	100.0	65	100.0
Does the child have snacks after evening tooth brushing? - yes	15	38.5	9	34.6	24	36.9
- no	20	51.2	17	65.4	37	56.9
- not sure	4	10.3	0	0.0	4	6.2
What kind of food does the child prefer? - solid	2	5.1	1	3.8	3	4.6
- soft	9	23.1	14	53.9	23	35.4
- not sure	2	5.1	1	3.8	3	4.6
- it is difficult to say	22	56.4	10	38.5	32	49.2
- no answer	4	10.3	0	0.0	4	6.2
Does the child have snacks between meals? - yes	29	74.3	17	65.4	46	70.7
- no	8	20.6	7	26.9	15	23.1
- not sure	2	5.1	2	7.7	4	6.2
Does the child have special diet? - yes	3	7.7	1	3.8	4	6.2
- no	36	92.3	25	96.2	61	93.8

DISCUSSION

The results obtained show that most students (81.6%) brushed their teeth more than once daily. However, it is distressing that only 24.6% of all students always received direct help from parents/caregivers in carrying out this procedure, while 9.2% only from time to time. White et al. conducted a survey on 378 Special Olympics athletes in the San Francisco Bay Area [7]. The authors found out that in patients aged 9-20 years 62.9% of them brushed the teeth once daily or more frequently, whereas 36.2% only 2-6 times a week, while among those aged 21-49 years 74.9% and 23.6%, respectively. However, Gerreth et al. conducted a survey among 71 participants of the Fifth National Special Olympics Badminton Tournament, aged 10-50 years, in Trzcianka in 2005 [8]. The authors noted that only 83.8% out of 37 patients under 20 years of age brushed the teeth daily, while in the group of people over the age of 20 years - 85.2%. Unfortunately, only one female under 20 years of age was assisted in oral hygienic measures. Due to the fact that Special Olympics athletes are individuals with lighter degrees of disability, with easier contact and most often move independently, they can be compared with a group of mildly and moderately disabled students from the present study, where 79.3% brushed the teeth more often than once a day and 10.3% from 2 to 6 times a week. These results were therefore slightly worse, although in this group 7.7% of parents/caregivers helped their children from time to time in this procedure. It is generally known that patients with disabilities often do not have adequate manual dexterity to clean their teeth properly. Hence, it is advisable that parents or caregivers help their children in this measure regularly and in patients with greater disability they should carry out the procedure for them.

In addition, it is worth mentioning that the published data also shows that parents, caregivers and nurses give much more attention to the overall hygiene of the body than oral hygiene [9].

One may assume that the parents of students from special-care schools are not always aware that they should help their children in tooth brushing or supervise them during this procedure. They may have never been informed of such a need by medical personnel or were not trained how oral hygiene should be performed in their children properly. Some may also think that their children are of legal age and self-sufficient in carrying out personal hygiene procedures.

The research shows that a vast majority of students used the traditional toothbrush (73.8%) and only 23.1% used interchangeably traditional and electric toothbrushes, or merely an electric one. The survey carried out in the same special-care schools among 171 mildly and moderately intellectually disabled children, aged 13-18 years, shows that up to 94.2% used only conventional toothbrushes, 3.5% electric and 2.3% both of them interchangeably [10]. And so, in the older group an interest in this method of removing dental deposits can be recorded. In the present study, in the group of mildly and moderately disabled, 76.9% of students used a traditional toothbrush, 7.7% an electric one, while 10.3% interchangeably traditional and electric ones, whereas in those severely and profoundly disabled 69.3%, 3.8% and 26.9%, respectively. An electric toothbrush also requires awareness in its application. Therefore, parents may find it easier to clean their children's teeth with a traditional brush, especially as its price is also considerably lower.

Unfortunately, people with disabilities do not often possess adequate skills in proper handling of the traditional manual toothbrush; thus, the application of an electric toothbrush is useful [1]. It is worth noting that modified toothbrushes as well as those specially designed for disabled patients are also available in the market [4].

Since many physically and intellectually disabled patients are also unable to put into practice the proper techniques of tooth brushing, it is recommended to use additional methods such as professional teeth cleaning by a dentist or hygienist as well as the use of prophylactic mouthrinses [1].

Unfortunately, in the present study, only 13.8% of parents/caregivers declared that their children used mouthrinses, including 10.7% immediately after tooth brushing and 3.1% at other times. In the group of mildly and moderately disabled, 12.8% of students used mouthrinse immediately after brushing the teeth, while 5.1% of persons at other times. It is striking that these values are significantly higher than those presented earlier on the basis of a survey conducted among 171 students, aged 13-18 years, at the same special-care schools in Poznan [10]. On the basis of an interview with mildly and moderately intellectually disabled children and adolescents it was found that the mouthrinse was used by 1.2% of the respondents (including 0.6% of students utilizing it immediately after tooth brushing and the same percentage at other times). Hence, it seems that with increasing age, patients more often use mouthrinses.

For patients who cannot rinse the mouth or spit, it is not possible to use a prophylactic mouthrinse. Hence, it is recommended that they should apply the preparations in the form of a spray or gel [11]. It is also desirable to use small portions of toothpaste. It should be used with caution in patients with severe disabilities, and with a tendency to vomit and choke. One can then clean the surfaces of teeth with a brush moistened with a mouthrinse [4].

One should note that in the process of shaping oral health habits the personal commitment of the patient is essential [1]. The introduction of personal hygienic procedures at home is a process that requires changes in lifestyle, priorities, schedule and other inveterate routines. It is emphasized that there is a need to shape the proper hygienic habits in the oral cavity in the first years of life, but the degree to which it will be achieved depends on several factors. Hence, educational programs concerning proper hygiene and diet targeted at children themselves as well as their parents/caregivers, teachers and medical personnel in kindergartens and schools would be undoubtedly of great importance in improving hygiene and oral health of disabled patients.

It has been shown that educational activities carried out in educational establishments are highly effective. Stefanovska et al. conducted an oral hygiene instruction and supervised tooth brushing in a population of 100 schoolchildren with mild and moderate intellectual disability in Skopje (Macedonia), in two age groups: 9-12 and 13-16 years [6]. The children and the teachers obtained individual instructions and assistance in brushing as well as demonstrations on tooth

brushing techniques. During six months dental team members visited the school twice a week, offering encouragement and support to the staff. Then, students brushed their teeth twice daily under the supervision of teachers. The authors found a decrease of OHI and CPITN indices in a 6-month period of research.

Christensen draws attention to the fact that it is extremely difficult to change the hygienic habits of the patient, who throughout his/her life has had poor oral hygiene [12]. The author emphasized the significant role of education. Intellectually disabled students can accept the changes in hygienic habits especially when their motivation is created [6]. Undoubtedly, it is crucial to involve persons from environs such as teachers and parents who are obligated to assist a child during the systematic hygiene procedures, including those performed within the oral cavity.

Educational activities should be taken up as soon as possible, that is at the nursery or preschool age. Due to the fact that most children can remain at home under parental care until they start going to school, it is important that general practitioners, pediatricians and dentists provide dietary and hygienic recommendations in the first years of a child's life.

In the present study, respondents also declared that 6.2% of students used dental floss, and 40.0% - chewing gum. It concerned mainly mildly and moderately disabled students, 10.3% and 59.0%, respectively. The survey carried out among the younger mildly and moderately disabled students of special-care schools, aged 13-18 years, shows that none of the children used dental floss, while 19.9% chewed gum daily, 19.9% once a week, and 8.7% once a month [13]. It seems obvious that dental floss is not quite commonly used in the population of disabled patients. Some authors recommend the use of floss holders, especially for those people with difficult access to the oral cavity or who have a habit of sudden teeth clenching. These holders certainly can facilitate or even allow the flossing procedure [11]. However, chewing gum, as a measure to reduce the risk of caries, may only be used among people with disabilities who understand how to properly use it.

The questionnaire data obtained shows also that a significant proportion of students (35.4%) preferred foods with a soft texture. This can be explained by the fact that patients with disabilities present relatively frequent problems with food consumption, and they are usually more pronounced in patients with greater degrees of disability [14,15]. This is also confirmed in the present research that soft food was mainly preferred among the severely and severely disabled students (53.9%). The reason for these disorders may include dysfunction of the stomatognathic system which ultimately leads to changes in the performance of movements during physiological functions in these patients [15]. Therefore, disabled persons are often fed with very finely shredded food. Dorin et al. had similar observations in their study, conducted in 2004-2005 in France among children and adolescents, aged 13.8±3.5 years [16]. The authors noted that 2.1% consumed shredded food, 3.6% with a mushy consistency, and 0.1% in liquid form [16]. Unfortunately, the patients fed with ground foods, who have problems with chewing and swallowing, are exposed to a large extent to dental caries due to prolonged retention of consumed products within the oral cavity.

Among some people with profound disabilities and associated systemic disorders the enteral feeding form is used, with the food of a mushy consistency. The publication of Cass et al. shows that the use of a gastrostomic tube in patients who have a swallowing difficulty, makes it easy to feed them, but also reduces the risk of aspiration and subsequent complications such as respiratory diseases [17]. Regular hygienic measures within oral cavity should also be carried out in such patients, since by the lack of contact with food with their teeth; they accumulate significant amounts of plaque and calculus. Hence, regular visits to the dentist should be held, to perform scaling and fluoride application.

The data obtained from respondents in the present study shows that in general, the students were not on a special diet (93.8%). However, a high percentage of parents/caregivers declared consumption of snacks by their children, between meals (70.7%) and after the evening tooth brushing (36.9%), and the problem affected both groups of students, mildly and moderately disabled as well as severely and profoundly disabled. This behavior does not have a positive effect on oral health, as evidenced by reports in the literature highlighting the relationship between the frequency of eating sweet snacks and beverages and the incidence of dental caries in healthy as well as chronically ill patients [5]. The survey conducted in special-care schools of Poznan among 171 students, aged 13-18 years, shows that only 4.7% of respondents did not snack between meals, while 53.8% of students consumed foods or beverages after the evening tooth brushing [13]. In the present study, better results were obtained, as 74.3% among mildly and moderately disabled students consumed snacks in-between meals, while 38.5% after the evening tooth brushing. Also, Al-Hussyeen and Al-Sadhan, on the basis of a questionnaire study conducted among mothers of children with Down syndrome, who attended the three educational institutions for intellectually disabled children in Riyadh (Saudi Arabia), found out that 56.0% of mothers gave their children sweets or sweet snacks occasionally, while 7.3% up to 3 times a day [5]. Unfortunately, it often happens that children are given sweets as rewards. It was also noticed by Al-Hussyeen and Al-Sadhan that 56.2% of mothers admitted they would occasionally give their children sweets as a reward, while 2.2% always gave it to a child [5].

One should also mention that in some disabled and chronically ill patients it is necessary to use a high-calorie diet in order to ensure an adequate level of nutritional status, or that they should take oral medication with sugar [18]. There can be no doubt that this also contributes to an increased risk of caries in these patients.

Currently, the preventive measures among disabled patients are being highlighted, due to the fact that dental treatment is difficult and more costly than prevention [11]. This is why the action should be aimed at education, from an early age. However, the learning environment such as school should play a key role in shaping the proper hygienic and dietary habits.

In conclusion, one can say that most adult students of special-care schools have not practiced proper dental health habits. Hence, there is highlighted a necessity of giving advice to the parents or caregivers of disabled patients from

the first years of a child's life, by doctors, nurses and dental hygienists not only in dental, pediatric and general practitioners' office, but also in kindergartens and schools by trained medical personnel as well as by teachers during classes and meetings with parents.

CONCLUSIONS

The study revealed a need for improvement of hygienic and dietary habits in adult students from special-care schools. It would be advisable to set up educational programs for the prevention of oral diseases targeted at their parents/caregivers, teachers as well as health professionals in special-care schools.

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