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Problems with access to dental treatment for children with epilepsy

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ABSTRACT

Introduction: Epilepsy is a common medical disorder and due to a variety of barriers, people with epilepsy may not have access to needed healthcare services, particularly based on their place of residence.
Objectives: The aim of the study was to assess access to dental treatment in children and adolescents with epilepsy in Lublin Voivodeship.
Material and methods: Clinical and questionnaire examinations were performed in 107 children and young people, of both sexes, in the ages between 6 and 18 years old from the Lublin macroregion.
Results: The majority (77.57%) of respondents regularly visited a general practitioner.
Most of the children did not undergo regular dental checkups. Children from the large cities significantly more often went to a dentist compared with examinees from a small town and from rural areas. According to the respondents 46.73% have encountered barriers to dental care of their child.
Conclusions: 1. Regulation of the legal and systemic treatment of children and youth with special needs is required.
2. It is necessary to increase the availability of dental care, especially for people living in villages and small towns.
3. It is advisable to provide training to medical personnel to prepare them to work with patients with disabilities.

1. Introduction

Epilepsy has been defined as a brain disorder characterized by an enduring predisposition to generate epilepsy seizures [1].

The number of people with epilepsy is high in most regions of the world, and hence, this disorder is perceived as a major public health concern [2]. The incidence (the number of new cases per year) of epilepsy ranges from 24 to 53 per population of 100,000 in developed countries [2]. The incidence of epilepsy among children from birth to the age of 15 years is approximately 5 to 7 cases per 10,000 [3].

Cognitive impairments that affect language, memory, attention, and other abilities critical to normal development are common among people affected by epilepsy [1].

According to various authors, mental disability affects from 5% to 83% of people with epilepsy, and physical disability, from 23% to 54% [4,5]. It is recognized that the population of people with disabilities belongs to groups at a high risk of oral diseases [6].

The Lublin Region is characterized by the highest occurrence of disabilities in Poland (approximately 19% of the region's population) [7]. These results are due, among other factors, to the agricultural-based economy of the region and the limited access to basic public services, such as treatment by a specialist [7].

The main aim of the public health care system is universality, equality, and accessibility to medical services. However, due to numerous technical and financial constraints and limitations of human resources, not all services can be offered either without restriction or at the same cost, depending on the place of residence [7–10].

Inequalities in health are found across Europe [7,11]. The main reasons for this arise from socioeconomic disparities. In Poland and in other countries in economic transition, one of the most important factors determining socioeconomic status is the place of residence (urban–rural) [11].

2. Objectives

The aim of the study was to assess the access to dental treatment for children and adolescents with epilepsy in Lublin Voivodeship.

3. Material and methods

Clinical and questionnaire were performed in 107 children and young people of both sexes, between 6 and 18 years of age who live in the Lublin macro-region. The questionnaire was directed at parents or guardians of the children and adolescents, and was distributed among them in schools or care institutions. The questionnaire contained 20 questions about sex, age of the respondent in years, place of residence (large city, small town, village), condition of the patient's health, medications, visits to the dentist, and treatment under general anesthesia.

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Clinical studies were performed with the aid of headlamp and diagnostic instruments used in dentistry (mirror, dental probe). The results obtained were statistically analyzed. The values of the measurable parameters analyzed were described using the application of the average and standard deviation values, while for parameters that were not measurable, the cardinality and the percentage were employed. The normalcy of the distribution of the analyzed parameters was assessed with the application of the Shapiro-Wilk test was assessed for the measurable features. The Mann–Whitney test was used for comparing two independent groups, and for comparing more than two groups, the Kruskal–Wallis test was applied.

The value of statistically significant differences or relations was $p < 0.05$. The database and statistical examinations were conducted using the STATISTICA 8.0 (StatSoft, Poland) computer software.

In the group examined, 50.47% of individuals had epilepsy and mental impairments, and 49.53%, epilepsy alone. The percentage of the respondents who lived in large cities was 35.51%. People from small cities comprised the same percentage (35.51%), whereas individuals from villages accounted for 28.97%. Among the respondents, 56.07% (60) were men, and 43.93% (47) were women.

The study was a part of Ministerial Project (NR 507-02-0222207319-03158). Ethics committee approval was given by the Medical University of Lublin, Poland.

The informed consent process was required.

4. Results

The majority (77.57%) of respondents regularly visited a general practitioner. Children with mental disability visited a general practitioner more often (83.33%) than patients without mental disability (71.70%). The observed differences were not statistically significant ($p = 0.15$).

All children with mental disabilities from large cities regularly visited a general practitioner. The percentage of patients from small towns who visited a general practitioner regularly was somewhat lower (80%), while the lowest percentage of people regularly seeing a general practitioner came from rural areas (70.59%). The observed differences were close to statistical significance ($p = 0.06$). (See Table 1).

In the group of children without mental disabilities, regular visits to a general practitioner were significantly more frequently reported by respondents from large cities (100.00%), than by examinees from small towns (44.44%) and rural areas (64.29%), ($p = 0.0005$). (See Table 2).

The statistical analyses showed no significant differences in the use of ongoing care provided by specialist doctors between the children with disabilities (87.04%) and children without disabilities (86.79%) ($p = 0.97$).

Most of the children did not undergo regular dental checkups ($n = 74$; 69.16%).

Children with epilepsy and without mental disabilities visited the dentist more regularly (39.62%) when compared with children with mental disabilities (22.22%). The observed differences were close to statistical significance ($p = 0.05$). (See Table 3).

Children from large cities visited the dentist significantly more often (50.00%) when compared with examinees from small towns (23.68%) and from rural areas (16.13%), ($p = 0.005$). (See Table 4).

The majority of the parents surveyed said that they were not satisfied with the dental care received (60.75%). Respondents who had children without mental disabilities were slightly more often satisfied with the dental care received by children (43.40%) than parents of children with mental disabilities (35.19%).

According to the survey, 46.73% ($n = 50$) of the respondents had encountered barriers related with the dental care of their children.

Statistical analyses showed that respondents who have children with mentally disability encountered barriers related with dental care of their children significantly more often (57.41%) than parents of children without disabilities (35.85%), ($p = 0.03$). The percentage (48.15%) of the respondents who stated that the dentist refused to provide care for their children with mental disabilities was 48.15%, while 31.48% complained of long waits for an appointment, and the same proportion of respondents complained about the architectural (office-related environmental) constraints and the high cost of the treatment. For 25.93% of the respondents, the dentist's office was too

Table 1
Regular visits to general practitioners among the surveyed children with mental retardation, taking into account the place of residence.

Place of residence	Yes	No	Total	Statistical analysis
	n %	n %	n %	
Country	12 70.59%	5 29.41%	17 100.00%	$Chi^2 = 5.55$ $p = 0.06$
Village	16 80.00%	4 20.00%	20 100.00%	
City	17 100.00%	0 0.00%	17 100.00%	
Total	45 83.33%	9 16.67%	54 100.00%	

Table 2
Regular visits to general practitioners among the surveyed children with epilepsy without mental retardation, taking into account the place of residence.

Place of residence	Yes	No	Total	Statistical analysis
	n %	n %	n %	
Country	9 64.29%	5 35.71%	14 100.00%	$Chi^2 = 15.26$ $p = 0.0005^*$
Village	8 44.44%	10 55.56%	18 100.00%	
City	21 100.00%	0 0.00%	21 100.00%	
Total	38 71.70%	15 28.30%	53 100.00%	

Table 3
Regular visits to the dentist among the surveyed children with epilepsy and mental disabilities and without disabilities.

Mental retardation	Yes	No	Total	Statistical analysis
	n %	n %	n %	
Yes	12 22.22%	42 77.78%	54 100.00%	$Chi^2 = 3.80$ $p = 0.05$
No	21 39.62%	32 60.38%	53 100.00%	
Total	33 30.84%	74 69.16%	107 100.00%	

Table 4
Regular visits to the dentist among examined children with epilepsy and mental disabilities and without disabilities, with regard to place of residence.

Place of residence	Yes	No	Total	Statistical analysis
	n %	n %	n %	
Country	5 16.13%	26 83.87%	31 100.00%	$Chi^2 = 10.60$ $p = 0.005^*$
Village	9 23.68%	29 76.32%	38 100.00%	
City	19 50.00%	19 50.00%	38 100.00%	
Total	33 30.84%	74 69.16%	107 100.00%	

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