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ORIGINAL ARTICLE

Social, Educational and Dental Profiles of Brazilian Patients with Special Needs Attended at a Center for Dental Specialties

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Abstract

Objective: To identify the profiles of patients with special needs attended at a Center for Dental Specialties. **Material and Methods:** This was a cross-sectional and quantitative study using an inductive approach, and a comparative and statistical procedure for analysis of the patients with special needs. Information concerning socioeconomic, medical and dental conditions was collected. The data were analyzed using IBM SPSS, adopting a significance level of 5%. **Results:** It was observed that 58.6% of the users were males, single (54.7%), in the age group from 19 to 59 years (41.1%), being 97.4% without schooling. The most frequent clinical diagnoses were: deviations in intelligence (18.4%), behavioral deviations (18.4%) and physical defects (17.9%). We observed for oral health the presence of gingivitis (33.0%), and healthy gums (47.8%); the presence of caries (64.9%), with restored teeth (28.5%), and edentulism (12.3%). Dental intervention procedures were initiated with emphasis on: fluoride applications (39.7%) and subgingival scraping (34.9%). Topical fluoride applications (p=0.010) and prophylaxis (p=0.010) were realized in patients without autism. Also, prophylaxis (p=0.007) was more frequently performed and gingival alterations were more often verified (p=0.020) in patients without Down's syndrome. **Conclusion:** The users of the patients with special needs dental service can be generally described as male, single, aged between 19 and 54 years, with the special conditions of intelligence and behavioral deviation.

Keywords: Disabled Persons; Oral Health; Health Services for Persons with Disabilities.

Introduction

Patients with special needs (PSN) are those who have physical, mental, sensory, developmental, behavioral and/or emotional deficiencies, as well as certain conditions that require medical attention (systemic health problems) and specialized treatment programs or services [1]. The number of patients in these conditions tends to increase as the population ages, since most chronic diseases and disabilities increase with advancing age [2,3]. Biotechnological advances as well as new therapeutic and management possibilities for PSN have positively impacted dentistry, affecting the management of these patients in clinical care [4].

The World Health Organization (WHO) estimates that the prevalence of disability in the world is 10%, and that of this disabled total; more than two-thirds do not receive any type of dental care. In developed countries, the services offered to PSN can be characterized by better access and resolution [5] as compared to developing countries, such as Brazil. Although it has public health policies that provide for dental care to individuals with special needs, Brazil needs better access and more specialized professionals [6].

PSN often present serious oral problems and face many difficulties in finding services appropriate to their needs; limited access, financial limitations, fear, ignorance, and even oral health care neglect [6]. In addition to these difficulties, factors related to inadequate professional training to care for people with special needs [6], the higher cost of such care [7], and their unfavorable social condition [8] all contribute to the many precarious health conditions that affect these patients.

This research, therefore, aimed to comprehend the offer towards and needs of people with special needs, as well as to evaluate associations between the need for dental care of patients with mental retardation, autism, cerebral palsy and Down syndrome, as compared to other types of special patients who seek dental care at the Center for Dental Specialties in João Pessoa, Brazil.

Material and Methods

Study Design and Sample

This was a cross-sectional and quantitative study, using an intensive direct documentation technique, based on analyses of dental records of people with special needs attended at the Center for Dental Specialties in the city of João Pessoa, Paraíba, Brazil, during the period between June 2012 and March 2016.

A total of 376 dental records were defined, based on census-type sampling, and selected considering the following criteria: a) inclusion: individuals of all age groups and sex, and b) exclusion: records with no information regarding variables of interest for the study.

Data Collection

Sociodemographic variables, clinical diagnosis, habits, customs, and oral health conditions were collected. The medical records were analyzed on-site, by researchers previously trained using 30 medical records that were not part of the final study sample.

In this study it was used the special patients classification (10 categories) suggested by the International Association for Dentistry for Patients with Special Needs (IADH) (Table 1):

Table 1. Distribution of categories for the classification of patients with special needs.

Category	Example
1. Intelligence Deviation	Mental Deficiency
2. Physical Defects	Cerebral Palsy, Stroke, Paraplegia
3. Congenital Defects	Down Syndrome
4. Behavioral Deviation	Bulimia, Anorexia, Autism
5. Psychological Deviation	Schizophrenia, Depression
6. Sensory and Visual Communication Deficiencies	Visual Deficiencies
7. Chronic Systemic Diseases	Hemophilia, HIV, Cardiopathy, Hypertension
8. Endocrine-Metabolic Diseases	Diabetes
9. Social Disorders	Alcoholism, Chemical Dependence
10. Special Physiological Status	Pregnancy, Elderly

Data Analysis

The data were inserted in a Microsoft Excel spreadsheet and submitted to descriptive statistical analysis (frequency and percentage values). The associations between dental history and mental disability, autism, cerebral palsy and Down syndrome were analysed using Chi-square and Fisher's exact tests, adopting a significance level of 5%. Data were analyzed using IBM SPSS Statistics for Windows Software, version 21 (IBM Corp., Armonk, NY, USA).

Ethical Aspects

This study was approved by the Research Ethics Committee of the Health Sciences Center of the Federal University of Paraíba (CAAE 46887815.5.0000.5188)

Results

For methodological reasons, pathologies and/or conditions were divided into two categories. The first refers to pathologies or conditions that the patient presented when starting the treatment, either through a medical report or Primary Care referral. Table 2 presents the main conditions, with emphasis on intelligence deviation (18.4%) and behavioral deviation (18.4%).

Table 2. Distribution of patients according to the type of special need.

Special Need Classification	N	%
Intelligence Deviation	69	18.4
Behavioral Deviation	69	18.4
Physical Defects	67	17.9
Congenital Defects	45	12.0
Chronic Systemic Diseases	36	9.6
Psychological Deviation	35	9.3
Sensory Deficiencies and Audio Communication	10	2.7
Endocrine System Diseases and Metabolic Defects	3	0.8
Special Physiological Status	2	0.5
Social Deviation	1	0.3
Not diagnosed or not informed	38	10.1

The second area involves pathologies or conditions that the dentist was able to obtain from the patient during dental treatment or anamnesis (Table 3), where it was possible to verify that mental disability (17.6%), autism (17.6%) and cerebral palsy (12.3%) were the most prevalent.

Table 3. Distribution of pathologies or conditions presented when starting treatment.

Special Need Classification	N	%
Mental Disability	66	17.6
Autism	66	17.6
Cerebral Palsy	46	12.3
Down Syndrome	39	10.4
Hypertension	29	7.7
Psychological Diseases	19	5.1
Schizophrenia	16	4.3
Stroke (Stroke)	6	1.6
Parkinson's Disease	4	1.1
Diabetes Type I	3	0.8
Nephrological Problems	3	0.8
Paraplegia	3	0.8
Neoplasia	2	0.5
HIV	1	0.3
Alzheimer's Disease	1	0.3
Not Specified	71	18.8
Total	375	100.0

Table 4 presents results obtained for socioeconomic variables. It was observed that the majority of participants were between 19-59 years (41.1%), male (58.6%), unmarried (54.7%), and without schooling (97.5%).

Table 4. Distribution of patients according to demographic characteristics.

Variables	N	%
Age (Years)		
0-11	97	25.6
12-18	84	22.1
19-59	153	41.1
<60	26	6.1
Undetermined	19	5.1
Marital Status		
Single	194	51.2
Married	28	7.4
Divorced	11	2.9
Widow	8	2.1
Not Specified	138	36.4
Sex		
Male	222	58.6
Female	157	41.4
Level of Schooling		
Early Childhood Education	5	1.3
Elementary School	3	0.8
Elementary Proficiency	2	0.5
Without Schooling	369	97.4

Table 5 presents the principal oral health conditions of the patients treated. According to the variables evaluated, in most cases the oral mucosa was normal (79.9%). In periodontal assessments, the majority presented normal characteristics (47.8%), but gingivitis also presented an expressive result (33.0%). The presence of caries (64.9%) and lack of restorations (71.5%) were the most important factors in relation to oral health status.

Table 5. Distribution of patients according to oral and dental characteristics.

Variables	N	%
Oral Mucosa		
Normal	303	79.9
Altered	11	2.9
No Diagnosis	6	1.6
Not Specified	59	15.6
Periodontal Evaluation		
Normal	181	47.8
Gingivitis	125	33.0
Periodontitis	20	5.2
Not Specified	53	14.0
Dental Caries		
Presence	246	64.9
Absence	99	26.1
No Diagnosis	13	3.4
Not Specified	21	5.5
Restored Elements		
Presence of Restorations	108	28.5
Absence of Restorations	271	71.5
Preventive Procedures		
Topical Application of Fluoride	149	39.7
Subgingival Scraping	131	34.9
Subgingival Scraping (Never)	208	55.5
Radiographic Examination Required to Start Treatment		
Yes	49	12.0
No	330	88.0
Treatment Completed		
Yes	93	24.8
No	282	75.2

Among those either with or without mental impairment, there were no statistically significant differences in the number of procedures performed such as "topical application of fluoride", "tartar removal", "prophylaxis" and "restoration"; or the conditions "gingival alteration" and "presence of caries" ($p>0.05$). Topical fluoride applications ($p = 0.010$) and prophylaxis ($p = 0.010$) were performed more for patients without autism. Prophylaxis ($p = 0.007$) was more frequently performed, and gingival alterations were more frequently observed ($p = 0.020$) in patients who did not have Down's syndrome (Table 6).

Table 6. Distribution of patients with mental disability, autism, cerebral palsy, and Down syndrome with regard to their history of dental treatments and oral health conditions.

Variables		Mental Disability				p-value
		Yes		No		
		N	%	N	%	
Topical Fluoride Application	Yes	26	17.4	123	82.6	0.806
	No	35	18.4	155	81.6	
Removal of Tartar	Yes	25	19.1	106	80.9	0.758
	No	36	17.3	172	82.7	
Prophylaxis	Yes	33	18.5	154	81.5	0.797
	No	28	17.4	133	82.6	
Restoration	Yes	36	21.3	133	78.7	0.232
	No	25	14.7	145	85.3	
Gums	Normal	23	15.8	123	84.2	0.815
	Altered	29	18.4	129	81.6	
	Periodontitis	6	23.1	20	76.9	
Dental Elements	Caries Present	57	20.5	221	79.5	0.108
	Caries Absent	4	8.7	42	91.3	
		Autism				
		Yes		No		
		N	%	N	%	
Topical Fluoride Application	Yes	40	26.8	109	73.2	0.010
	No	23	12.1	167	87.9	
Removal of Tartar	Yes	26	19.8	105	80.2	0.273
	No	37	17.8	171	82.2	
Prophylaxis	Yes	45	25.3	133	74.7	0.010
	No	18	11.2	143	88.8	
Restoration	Yes	26	15.4	143	84.6	0.940
	No	37	21.8	133	78.2	
Gums	Normal	33	22.6	113	77.4	0.219
	Altered	25	15.8	133	84.2	
	Periodontitis	3	11.5	23	88.5	
Dental Elements	Caries Present	48	17.3	230	82.7	0.810
	Caries Absent	10	21.7	36	78.3	
		Cerebral Palsy				
		Yes		No		
		N	%	N	%	
Topical Fluoride Application	Yes	20	13.4	129	86.6	0.247
	No	19	10.0	171	90.0	
Removal of Tartar	Yes	14	10.7	117	89.3	0.345
	No	25	12.0	183	88.0	
Prophylaxis	Yes	14	10.7	117	89.3	0.236
	No	25	12.0	183	88.0	
Restoration	Yes	16	9.5	153	90.5	0.201
	No	23	13.5	147	86.5	
Gums	Normal	11	7.5	135	92.5	0.133
	Altered	24	15.2	134	84.8	
	Periodontitis	4	15.4	22	84.6	
Dental Elements	Caries Present	30	10.8	248	89.2	0.291
	Caries Absent	6	13.0	40	87.0	
		Down Syndrome				
		Yes		No		
		N	%	N	%	
Topical Fluoride Application	Yes	23	15.4	126	84.6	0.110
	No	16	8.4	174	91.6	
Removal of Tartar	Yes	13	9.9	118	90.1	0.074
	No	26	12.5	182	87.5	
Prophylaxis	Yes	27	15.2	151	84.8	0.007
	No	12	7.5	149	92.5	
Restoration	Yes	19	11.2	150	88.6	0.980
	No	20	11.8	150	88.2	
Gums	Normal	25	17.1	121	82.9	0.020
	Altered	9	5.7	149	94.3	
	Periodontitis	4	15.4	22	84.6	
Dental Elements	Caries Present	28	10.1	250	89.9	0.313
	Caries Absent	8	17.4	38	82.6	

Discussion

In this study, the sociodemographic characteristics, medical conditions, and odontological aspects of the patients were considered. Patients with some type of disability often need multiprofessional care specifically targeted to their condition, and health professionals should be prepared to offer adequate and quality treatment [9].

Several recent studies demonstrate that oral alterations can compromise the general health of the individual and impact quality of life and well-being, physically, socially, and psychologically [2,3,7]. The importance of knowing the profile of the patient who will receive treatment is clear. It is noteworthy that such research is scarce [6,7] reinforcing the importance of the data obtained.

Among the patients attended at the Center for Dental Specialties where the study was carried out, the greatest demand (more than 57.0%) was found in the mentally handicapped, the autistic, those with cerebral palsy, and those with Down syndrome. These conditions may have been associated or not with pathologies such as heart disease, hypertension and others. The results corroborate a previously published study, which justified their findings from communication difficulties that exist in patients who present such conditions [10]. This limitation is often aggravated during anamnesis, since these pathologies, for the most part, are not reported in patient reference files obtained from Basic Health Centers. The professional must be alert and check for the presence of these conditions, and when encountered modify the service protocol. The importance and care of performing a detailed anamnesis is emphasized.

During anamnesis, pathologies or systemic conditions such as hypertension, epilepsy, psychological diseases, and cardiopathy are often found. These pathologies can be considered chronic or acquired, and present higher demands in specialized services [10,11]. It should be emphasized that the existence of this specialty at the Centers makes it both a reference and differential, since other Specialty Centers do not provide care focused on the PSN [10]. Of the various types of Centers listed on the Ministry of Health website, from the most basic to the most complex and largest, specialties with prostheses and PSN are differential. A study relating the distribution of Centers for Dental Specialties in Brazilian capitals with the special needs population reported PSN attendance limitations, especially regarding the geographical distribution of the Centers [12]. The need for expansion and planning was emphasized, aiming at implementation and/or expansion of PSN specialization in Centers for Dental Specialties.

Analyzing the results of the present study verifies that user ages vary from infancy to elderly. It was observed that the PSNprofile found in this study involves males from 19 to 59 years of age, single, and without schooling. A report published by the WHO reveals a life expectancy of 63.1 years for both sexes, which may vary according to country [13]. One justification for this contrasting result lies in the fact that individuals in the third age and who need the specialized services do not seek it or find travel barriers. Detailed research regarding dental care and such users, who often seek care in the medical clinic yet are too weak, or without vehicular access to the service is needed.

As to gender, the male gender represented the highest percentage; this characteristic is also found in national and international studies that assess profiles of the PSN patient [5,6,10,14]. Another socioeconomic variable evaluated in this study was the level of schooling and marital status, being respectively mostly low-level schooling and unmarried. It was observed that these variables are not addressed in other studies aimed at the quality of life and profile of the PSN [6,8], yet retain great social importance. Although education is included in human rights, our results suggest that in order to enable these individuals to enter the labor market, inclusion of PSN in education requires more investment and improvements. The literature identifies the existence of barriers, even in developed countries, that make it difficult to include PSN in school and consequently, the labor market [14]. This allows us to affirm that we are facing a worldwide social problem that requires attention from the authorities.

Regarding marital status, the results presented in this study show that the disabled people seen in this referral service, for the most part, did not have an affective partner. Marriage often helps in the recovery of certain pathologies, especially mental ones [15]. The results found in the present study are related to the type of disability, but also to social and sexual factors, such as body image, self-esteem, and sexual identity [15,16]. Since it is related to self-esteem and the capacity for social relations, the importance of sex in the life of the individual is emphasized.

Most of the patients presented caries, yet for many, no restorative procedure was detected (71.5%), that is, they were healthy. Caries is an aggravating condition in oral health, affecting most of the PSN, as already demonstrated in other studies [2,17]. It is noticed that there is a need for preventive dental treatment; however it is often not performed in basic care, and as a consequence, such low complexity procedures are performed in Secondary Care. This is observed in the prevalence of patients who did not have access to preventive and/or prophylactic procedures in primary care (55.5%). Yet, the vast majority of this public would allow performance such procedures, which are quick and do not involve pain or discomfort.

On the other hand, the presence of healthy teeth suggests that there is greater caregiver attention towards oral hygiene, and also, that many referred users present neither motor nor psychological limitations that might make it impossible to perform oral hygiene.

Regarding preventive procedures, it was observed that 50.7% users did not have access to prophylaxis or fluoride application until they had been attended to in the referred Center for Dental Specialties. Subgingival scraping had only been performed previously in 34.9% of the users. Through these results, it can be seen that preventive procedures that should be performed in less complex care situations, aiming at health promotion, are not being performed [5]. This is in conflict with recommendations of the Brazilian Ministry of Health, where care for patients with special needs, being collaborative, should be performed in the primary care health units.

Referrals should be made with plausible justifications concerning the complexity of the patient's treatment and/or collaboration, and include structural and biological conditions which do not allow a particular procedure to be performed. Other studies support the reality found in this

study [5,18], and allow us to reflect on factors and reasons which cause dentists in Primary Care to refer patients, when in fact reception and treatment might have been performed immediately.

This reality shows the deficiency that exists in the referral process from Primary to Secondary Care, since users are often referred to Secondary Care unnecessarily. From the data contained in Table 3, it is possible to verify that more than 50% of the referenced users were accessible and collaborative, but did not have access to the most basic procedures that should be performed upon the first consultation in Primary Care. Such procedures include prophylaxis, topical application of fluoride, small and superficial restorations which may be performed in collaborative PSN, as are the vast majority of patients with Down syndrome. What should be referenced to Secondary Care are the more complex procedures, such as complex restorations, surgeries and even tartarectomies, which are more invasive, time-consuming and can involve pain. The need to investigate these factors and to stimulate health professionals with focused motivational training is emphasized.

On the other hand, a study carried out in the same state showed that approximately half of the procedures performed (50.9%) had indeed been performed in Primary Care [6]. This can be explained by greater populations in large cities and a concentration of reference centers for the treatment of PSN.

Low technical complexity and preventive procedures such as scraping, and simple restorations can and should be performed in the structure provided by basic care. The Oral Health Team in the primary care should evaluate the general condition of the patient (even before the patient is eligible as a PSN), as to whether it is possible to perform less complex procedures quickly. And only after this step, verify the actual need of the patient to be referenced towards medium complexity, in this case the Center for Dental Specialties.

That the user may have special needs does not justify their referral, but rather the level of complexity of the procedure and the patient's systemic condition. The dental surgeon must be familiar and prepared to perform dental procedures with probable changes in the protocol of care, to avoid performing day to day treatments in PSN patients is unjustified [19]. It is necessary to implement correctly planned interventions, be it at the local, state or national level and allow the benefits of basic and secondary care to reach and respond correctly to demand; especially of the groups that present a greater need of specialized reception and treatment [20].

Radiographic examinations, which play an important role in the diagnosis and planning of dental treatment, were performed in 40 (12.0%) users. This value is lower than expected and might be justified by the difficulty in performing the required radiographic techniques for many of these users. The service itself sometimes presents technical limitations, a reality found in previous studies involving Dental Specialty Centers [10]. However, the importance of radiographic examination in dental treatments is emphasized. This suggests further research to facilitate radiographic examinations for PSN.

The dental treatments presented a low percentage value (24.8%) for conclusions; mostly due to finalizing the data collection. Most of the treatments in fact were completed after data collection, and many required more time because of the complexity and difficulty of performing dental procedures when involving PSN.

The present study demonstrated that the majority of autistic and Down syndrome individuals enjoyed access to at least some dental treatment and presented better oral health conditions than those with either mental deficiencies or cerebral palsy. This may be directly related to the fact that patients with Down syndrome (and autistic patients) present better motor skills (for performing oral hygiene) than patients with mental retardation or cerebral palsy.

That the service faces gaps in the referral stages is perceived, making it difficult to bring basic and specialized dental treatment to PSN. Thus, Institutions of Higher Education (IHE) maintain a crucial influence on the attitudes and behaviors presented by professionals, and it is necessary to recognize the importance of this discipline/subject in physician training, which even today is taught only in a minority of IHE [8,21]. As is observed in other specialties, such as surgery, and periodontics, among others, an academic training that allows dentists to enter the labor market with a preview of PSN dental care to perform medical procedures and thus decrease unnecessary referrals, would easily permit the professional to carry out low complexity interventions.

Added to this are the difficulties in achieving adequate oral hygiene, since many of these patients have some motor difficulty, cleanings become the responsibility of the care taker, who is often unable to perform the service due to various daily activities, and the general mind-set is that oral self-hygiene is impossible for PSN [7]. This argument might explain the oral mucosa results of users, which found that for most users, gingival and periodontal health was affected; only a small percentage of users presented healthy gum and periodontal conditions.

Medium complexity services presented an adequate performance within public municipal oral health programs; not to diminish the importance of identifying failures. These must be remedied in order to offer an even better service to citizens with special needs (as referenced users) at primary care centers and centers for PSN.

Conclusion

The users are predominantly male, unmarried, aged between 19 and 54 years, without schooling and presenting deviations in intelligence, behavior, and physical defects, as principal clinical conditions, and are referenced for specialized treatment from differing locales of the Paraiban capital. There were no differences in the number of "topical fluoride", "tartar removal", "prophylaxis" and "restoration" procedures, or in "gingival alterations" or in "the presence of caries"; as conditions involving those presenting or not some mental deficiency;. Topical applications of fluoride and prophylaxis were performed mostly in patients not presenting autism. However, for non-Down syndrome individuals a higher frequency of gingival alterations and a greater number of realized prophylaxes were noted.

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