SURVEY OF DENTAL SERVICES PROVISION TO PEOPLE WITH DISABILITIES IN GEORGIA

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Abstract:

Access to dental care for people with disabilities is mostly related to various social and physical obstacles. The goal of this research is to study an overall situation of dental care access for persons with disabilities, follow up the factors influencing access to dental care for 15 nosologies. Qualitative and quantitative research methods were utilized. One hundred and forty two (142) dentists and residents (79% dentists and 21% resident dentists) were interviewed with self-administrated questionnaire. Research results demonstrate that 77% of persons with disabilities have applied for dental care at least once in their lifetime and mostly persons with Down syndrome have been refused to be served. According to the research results, treatment is most efficient in patients with diabetes, least efficient – in patients with cerebral palsy. **The vast majority** of the respondents wish to get more information on all 15 nosologies. Remarkably high interest was revealed towards autism, HIV/AIDS and hepatitis, the low interest – towards **visual/hearing impairment**. Research findings confirmed an obvious relation between being informed and readiness to provide dental service; moreover, the level of awareness on disability conditions is quite low. The attitudes to serve the persons with disabilities are tended to be negative. The lowest acceptance is demonstrated towards persons with Acquired Immune Deficiency Syndrome, AIDS. The study revealed the importance of revision of dental education modules on a higher education and post-diploma level in order to integrate several thematic issues with regard to disability and health conditions.

Keywords: Disabilities, special health care needs, social attitudes, readiness to provide dental care

Introduction:

Dental care is one of the most important spheres in rehabilitation and treatment for persons with disabilities, nevertheless one of the most inaccessible ones [10, 26, 15, 16]. Studies conducted in different countries of world show that during the visit to a dentist such specific patient often faces a different kind of physical, psychological, and social problems that significantly limit the services or, as a rule, make it completely inaccessible for the consumer. A pilot study conducted by us revealed that some dentists refuse to give the dental services to the people with disabilities, and for people with disabilities nowadays dentistry is considered to be one of the most important, but the least accessible area of medical service in Georgia for them. Three main factors seem to have negative influence on dental service access: 1) the poor physical accessibility, 2) lack or low level of awareness on certain kind of disability 3) a negative attitude towards the people with disabilities [5, 6, 11, 21, 23, 26].

Some studies demonstrate that denial to give dental care is related to a little information, provided during the medical studies and lack of information can be also lead to students' stigmatised attutudes towards patients with disabilities [2, 7, 8, 9, 10, 12, 14, 20, 22, 30, 31, 32]. On the other hand, the existing empirical data shows that there are proven certain ways to increase the access to dental services. Studies in USA demonstrate that raising the level of awareness on disabilities is the first step to develop social desirability and positive attitutes towards the people with disability [10, 12, 30]. Besides, some studies reveal that growing working experience with people with special needs is raising the efficiency of treatment [25].

Residental studies for dentists in Georgia vary from 11 to 33 months depended on specialisation. But none of education modules contains the information on special needs dentistry. There is no research concerning the access to dental services for people with disabilities in Georgia. Besides, there is no questionnary to examine the issue [17, 18, 19, 24].

The positive experiences of making dental care more accessible for people with disabilities can be generalized and tailored with Georgian reality, for this purpose it is necessary to be aware of the current needs and situation in Georgia [21, 26].

Results of work can be useful as a recommendation on dental care services for raising accessebility for people with disabilities.

Hypothesis: the level of awareness on developmental disabilities and chronic diseases affect the delivery of dental services, its performance effectiveness and dentists attitudes towards disabled patients.

Methods:

The **goal** of the survey was to clearly identify the following:

- The level of availability to the dentist service for the disabled people;
- Identification of physical, informational, psychological and social factors affecting the provision with dental services to the disabled patients by the dentists.

Preparation of the questionnaire: bases on the data from the Ministry of Labor, Health and Social Affairs we identified the nosologies/conditions that are the most frequent basis for awarding the status of disability.

There were also organized the meetings with the dentists to ascertain the nosologies that are actual for the sphere of dentistry and higher-priority for the survey.

On the next stage we conducted the meetings with the **focus groups**. The meetings were organized in the Association “Anika” and the Georgian Blinds Union. Our goal was to determine the nosologies significant for the survey and focusing on the key issues included in the survey inventory.

We summarized the epidemiologic data of the last period; after analyzing (in consideration of the urgency of the issue, problematical character matters in the sphere of dentistry, the epidemiology or/and frequent references) the outcomes obtained as a result of the work there were selected 15 nosologies:

1. Cerebral palsy. 2. Autism, 3. Tic disorders. 4. ADHD (Attention deficit and Hyperactivity disorder) 5. Down syndrome. 6. Impairment of Hearing /deafness. 7. Visual impairment/blindness. 8. Epilepsy. 9. Mental retardation 10. HIV/AIDS. 11. Hepatitis. 12. Behavioral disorder 13. Diabetes. 14. Asthma. 15. Acquired disability.

On the basis of the data obtained there was identified the structure of the questionnaire and developed its pilot version; consequently the pilot survey was initiated. The survey was conducted in Tbilisi and covered interviews with 30 dentists; the final version of the questionnaire was developed on the basis of the pilot survey outcomes.

Participants and their recruitment:

The survey was conducted in Tbilisi and the regions. In Tbilisi case there was created the special frame for selection of the respondents while in the regions we applied the principle of "Snowball".

The survey target group general number was considered 5988 dentists licensed in 2006-2010 years in Georgia and 820 (maximal quota of the Georgian residency bases seekers); the selected total amounted to 6000 dentists (residents and licensed physicians) – 8,9% of the general number. In total, from 600 respondents 142 individuals` questionnaire were processed, i.e. the number of interviewed individuals amounted to 142.

Statistical methods: Data was processed by using SPSS for Windows version 17 (statistical package for social sciences), there was computed simple average, relative frequencies, standard deviation. To examine variations between groups, tests with significance were made with χ^2 for categorical variables, The statistical reliability of the differences between groups was examined by the χ^2 criteria while for the statistical significance of the difference between two samples mean Student's t-distribution. There were applied both - quantitative and qualitative approaches.

Survey inventory:

The survey inventory regarding the issue of availability of dental service for the people with disabilities, the self-administered questionnaire is drafted with semi-structural questions; the questionnaire consists of several blocks.

The first block is assigned for collection of demographic data, the second block contains the data regarding the frequency of references by the patients with disabilities as well as it studies the facts and frequency of provision/non-provision of the dentist service to the patients.

The third block of the questionnaire collects the information about effectiveness of the treatment while the fourth block is dedicated to the studies of approaches and attitudes of the dentists toward the disabled patients. Several instruments have been inserted for survey of the attitude including the Bogardus social distance scale method; the fifth block of the questionnaire inspects the respondent`s level of awareness of 15 nosologies.

The questionnaire includes the questions regarding physical environment; it studies the dentists` opinion to ascertain whether there is the need of special environment of the disabled patient or where should such patients be given dentist service – at home, in clinic or in any specialized facility.

Results:

According to the results obtained, 77.5% of the respondents were female, while 22.5% were male. Average age - 32 years. 79% of the respondents were physicians and 21% - residents. 84% of the participants were from Tbilisi; 60% were therapist-dentists. Our study revealed that:

- The persons with disabilities often apply to the dentist for relevant treatment. Among those the most frequent referral of patients falls on the patients with diabetes (61%; χ^2=99.7; p=0.000) and the least – on those with tic disorder (9.2%; χ^2=301.3; p=0.000) and autism; (11.3%; χ^2=387.0; p=0.000)
- The patients with Down Syndrome are rejected to be given the medical services in the most frequent cases (30%; p=0.000) and while such rejection is the most rare among the individuals with asthma (7%; p=0.000);
- According to the survey participants, treatment is the most effective among the patients with diabetes while the medical treatment for the persons with cerebral palsy is assessed as the most inefficient. (χ^2=75.0, p=0.000), 2.2% of the respondents claim, that the

main reason for treatment rejection was the non-adapted environment, in particular, non-adapted dental chair. 5.2% claim the communication difficulties as the barrier.

- The large part of the respondents are informed about Diabetes (76.8%; χ^2=122.8, p=0.000), vision and hearing impairment, (75%; p=0.000) violation/deafness, the less information is delivered to the patients with tic (36%; χ^2=53.6, p=0.000) and behavioral disorders (46%; χ^2=106.6, p=0.000). The majority of the survey participants want to enhance their knowledge about all 15 nosologies. Particularly high interest was fixed in autism (76%; χ^2=100.1, p=0.000), HIV/AIDS (69%; χ^2=90.8, p=0.000) and hepatitis (66%; χ^2=81.2, p=0.000) while the lowest interest was shown in vision and hearing impairment/deafness; as it can be seen from the research results, 57% of respondents do not possess the right knowledge about autism. 59% of respondents claimed that they have information about Down syndrome, while 26% of them could not name at least one symptom.
- Research shows that the most feared category of patients are those with HIV/AIDS. The patients with epilepsy, tic disorder and hepatitis are almost at same level (p=0.000). 23% of respondents claim that persons with disabilities show specific warmness towards the medical personnel (27% say the opposite, 50% restrain themselves from answer) (χ^2=18.0, p=0.000). 43% say that people with disabilities express positive attitude; 47% evaluated the attitude of people with disabilities towards the doctors as negative and noted, that such patients suffer from fear, aggression, feeling of danger, they try to hide truth about their condition in order not to be rejected.

The injection of local anesthetic solutions to achieve anesthesia is one of the most commonly performed dental procedures. Prior to administering any medication, including local anesthetics, it is appropriate for the dentist to take a complete medical history and follow up any questions with the patient or by a consultation with the patient's physician. Though local anesthetics are remarkably safe at therapeutic doses, the practitioner treating medically complex patients must address two basic concerns pertinent to the use of local anesthetic agents: existing systemic diseases that may be exacerbated by the anesthetic agent and medications that may have adverse interactions with local anesthetic agents.

We suggest characteristics of few, mostly interested in Georgia, diagnoses and dental management of such patients.

Diabetes

The bi-directional association exists between diabetes mellitus and periodontal health: Diabetes is associated with increased development and progression of periodontitis, and periodontal infection is associated with poorer glycemic control in people with diabetes.

There is also evidence emerging that suggest that periodontal disease is associated with increased risk for diabetes complications, the development of Type 2 diabetes, and perhaps the development of Gestational Diabetes Mellitus.

Patients with either Type I insulin-dependent diabetes mellitus or Type II non-insulin-dependent diabetes mellitus, can generally receive local anesthetics without special precautions if control of their disease is well-managed. Consultation with a patient's physician, as well as frank discussion with the patient, can determine the current status and what, if any, precautions are needed.

Typically, diabetic patients should receive morning appointments when endogenous corticosteroids are at high levels (better stress management). Appointment should be kept as no traumatic, short, and stress-free as possible, as endogenous epinephrine release in response to stress and pain can antagonize insulin action and promote hyperglycemia. Epinephrine should be used in the dental anesthetics to ensure long lasting and profound anesthesia. Post-operative analgetics should be provided to ensure that the patient is pain-free following tooth extraction periodontal surgery, or any other invasive procedure [33,35]

Special caution should be used for patients with Type I diabetes who are being treated with large doses of insulin. Some of these patients, so-called brittle diabetics, experience dramatic swings between hyperglycemia and hypoglycemia; and the use of vasoconstrictors should be minimized due to the potential for vasoconstrictor-enhanced hypoglycemia.

Cardiovascular Diseases

Local anesthetic agents themselves can affect the cardiovascular system, especially at higher doses. Cardiovascular manifestations are usually depressant and are characterized by bradycardia, hypotension, and cardiovascular collapse, potentially leading to cardiac arrest. The initial signs and symptoms of depressed cardiovascular function commonly result from vasovagal reactions (dizziness and fainting), particularly if the patient is in an upright position [39, 40].

Absolute contraindications for the use of local anesthetics with or without vasoconstrictors in patients with cardiovascular diseases exist only if the patient's condition is determined, by the dentist's review of the health history, to be medically unstable to the degree of posing undue risk to the patient's safety. Dental care should be deferred in these patients until their medical conditions have been stabilized under the care of their physicians. For patients with stabilized cardiovascular diseases, dental treatment may usually be delivered in near routine fashion [39].

In 1964, the American Heart Association and the American Dental Association concluded a joint conference by stating that "the typical concentrations of vasoconstrictors contained in local anesthetics are not contraindicated with cardiovascular disease so long as preliminary aspiration is practiced, the agent is injected slowly, and the smallest effective dose is administered. "It has long been recommended that the total dosage of epinephrine be limited to 0.04 mg in cardiac risk patients. This equates to approximately two cartridges of 1:100,000 epinephrine-containing local anesthetic. The results of a number of studies indicate that the use of one to two 1.8 ml cartridges of local anesthetic containing a vasoconstrictor is of little clinical significance for most patients with hypertension or other cardiovascular diseases, and that the benefits of maintaining adequate anesthesia for the duration of the procedure far outweighs the risks. However, the use of more than two cartridges of local anesthetic with a vasoconstrictor should be considered a relative rather than an absolute contraindication. If, after administering one to two cartridges of vasoconstrictor-containing local anesthetic with careful preliminary aspiration and slow injection, the patient exhibits no signs or symptoms of cardiac alteration, additional vasoconstrictor containing local anesthetic may be used, if necessary, or local anesthetic without epinephrine can be used.

Down syndrome

A compromised immune system with a corresponding decrease in number of T cells is characteristic of most individuals with Down syndrome This contributes to a higher rate of infections and is also a contributing factor in the extremely high incidence of periodontal disease, that can be the reason why the amount of plaque and calculus seen on the teeth is not proportionate to the severity of the disease. Children with Down syndrome often have chronic upper respiratory infections (URIs). These contribute to mouth breathing with its associated effects of xerostomia (dry mouth) and fissuring of the tongue and lips. There is also a greater incidence of apthous ulcers, oral candida infections and acute necrotizing ulcerative gingivitis (ANUG). Although 40 to 50% of babies with Down syndrome are born with some type of cardiac abnormality, most receive surgical correction within the first few years of life. There is however, an abnormally large percentage who develop mitral valve prolapse (MVP) by adulthood. The incidence of MVP in the normal population is between 5-15%. Approximately 50% of adults with Down syndrome have mitral valve prolapse requiring subacute bacterial endocarditis (SBE) prophylaxis for dental treatment (Barnett,

Friedman, & Kastner, 1988). One third of these adults with MVP do not have auscultory findings, requiring diagnosis of the MVP by echocardiogram. Patients with Down syndrome, or their caregivers may not be aware of the need for diagnostic echocardiology in adulthood.

It may take a little extra appointment time to explain procedures to the patient with Down syndrome, but once a level of trust is achieved they are likely to be very co-operative patients. Down syndrome is frequently seen in conjunction with other medical problems. There is a higher incidence of epilepsy, diabetes, leukemia, hypothyroidism and other conditions. Alzheimer's disease and Down syndrome appear to have a strong connection to one another. The importance of a thorough medical history including a work-up by a physician cannot be over emphasized [38].

Asthma

Dental management of asthmatic patients is primarily aimed at prevention of an acute asthma attack. Knowing that stress may be a precipitating factor in asthma attacks, adherence to stress-reduction protocols is again essential and implies the judicious use of local anesthetics containing vasoconstrictors when the planned procedure requires extended depth and duration of anesthesia. However, caution has been recommended based upon Food and Drug Administration warnings that drugs containing sulfites can be a cause of allergic reactions in susceptible individuals. Studies suggest that sodium metabisulfite, which is used as an antioxidant agent in dental local anesthetic solutions containing vasoconstrictors to prevent the breakdown of the vasoconstrictor, may induce allergic, or extrinsic, asthma attacks. Data on the incidence of this problem occurring is limited, and suspicion is that it is probably not a common reaction even in sulfite-sensitive patients since the amount of metabisulfite in dental anesthetics is quite small. Indications are that more than 96 percent of asthmatics are not sensitive to sulfites at all; and those who are sensitive are usually severe, steroid dependent asthmatics. As Perusse and colleagues conclude, “we believe local anesthetic with vasoconstrictor can be used safely for no steroid-dependent asthma patients. However, until we know more about the sulfite sensitivity threshold, we recommend avoiding local anesthetic with vasoconstrictors in corticosteroid-dependent asthma patients on account of a higher risk of sulfite allergy and the possibility that an accidental intravascular injection might cause a severe and immediate asthmatic reaction in the sensitive patient" [33, 37].

Hepatic Disease

For patients with known liver function impairment, drugs metabolized by the liver should be avoided if possible, or the dosage at least decreased. Since all of the amide local anesthetics are primarily metabolized in the liver, the presence of liver disease and the status of liver function are important to the dentist. In completely recovered patients, local anesthetics may be administered routinely. However, patients with chronic active hepatitis or with carrier status of the hepatitis antigen must be medically evaluated for impaired liver function. Local anesthetics may be used in these patients, but it is recommended that the dose be kept to a minimum. In patients with more advanced cirrhotic disease, metabolism of local anesthetics may be significantly slowed, leading to increased plasma levels and greater risk of toxicity reactions. Total anesthetic dosage may need to be reduced and the interval of time between subsequent injections may need to be extended. In these cases, initial injection with rapid-onset anesthetics such as lidocaine or mepivacaine followed by injection with a long-acting anesthetic like etidocaine or bupivacaine may be the best protocol for limiting total anesthetic dosage while achieving adequate pain control duration [34, 36].

Discussion:

Half of the respondents in our study had personal relationships experience with persons with disabilities. The study conducted in Germany showed that the personal

relationship is the precondition of establishment of positive attitude. It is noteworthy that in our study the opposite result was gained when it was compared the personal relationship and the attitudes toward disabled people. It was found that the proportion of respondents who had experience with persons with disabilities have a more negative attitude, though, it does not seem whether this attitude was developed by the experience a personal relationship or its was conditioned by their initial opinion before the relationship with the persons with disabilities [25, 26].

A large part of the respondents (59%) believe that for the services to be rendered to the persons with disabilities there will be necessary a special environment (χ^2=47.7, p=0.000), though neither of them provides with the relevant picture while describing the physical or social environment that would be close to the universal design dental clinic. However, taking into consideration that service at home is even more unacceptable but it is quite acceptable redirection to the "Specialized clinic"(67%, χ^2=166.9, p=0.000), we can conclude that we are dealing with a particular attitude [13].

The attitudes to the individuals with the conditions/illnesses conditions of which impact their behavior or/and is associated with a delay in intellectual development is sharply negative.

It should be emphasized that more than half of the respondents indicated that they have no information about hyperactivity syndrome, tic of behavior disorder; "in the case of asthma, diabetes and acquired restrictions we obtained practically the similar results – the most respondents have the sense of compassion or they have not any special attitude.

The study results identified the main problems that affect the desired results - efficiency of the service and providing the dental services to the persons with disabilities. These factors are awareness and attitude. In the both cases number of measures is to be taken to minimize the facts of rejection to provide the services from the dentists.

It should be emphasized that the majority of the dentists is willing to raise the level of their awareness regarding specific nosologies.

Conclusion:

As the results of the research show that respondents' knowledge about chronic diseases is higher than about development disorders.

From 15 nosologies identified for the study the most positive attitude and results fall on asthma and the most negative – on HIV/AIDS

According to the obtained results, the hypothesis was partly justified. Our research showed the clear connection between the service providing and awareness. Over half of the respondents considers unacceptable even neighboring the people with disabilities, though the majority of the study participants express their willingness to provide them with dental services.

Several recommendations could be worked out based on the research results:

1. Activities which will be oriented on informational awareness should be organized, which means integration of studying modules into practice and high educational programs.
2. Activities for raising the awareness and practical skills for practicing doctors
3. Raising the awareness in the area of working with people with disabilities and environment adaptation.

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