The oral health of Romanian young adults with multiple disabilities, in Bucharest, Sector 2

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Abstract

Aim: To carry out a field study of the oral health status, and evaluate the treatment needs of subjects with multiple disabilities in a long term residential care setting “Recuperation and rehabilitee centre for persons with handicap” (CRRPH) in Bucharest, Romania. Design: All residents were included in the study. Clinical examinations were based on the World Health Organisation criteria for field studies and carried out in the dental clinic of the residential centre, in dormitories or outdoors. Oral hygiene, mineralisation disturbances, dental and periodontal status were evaluated. Results: 155 patients (85 males and 70 females) in CRRPH were examined. The average age of the residents was 21.5 years. The patient compliance was evaluated as good (99%) despite dental fear in many cases. Twenty five per cent of the residents had a full dentition, three were edentulous or only had roots remaining and seven still had their primary teeth. The results showed a mean DMFT of 6.4. The number of untreated decayed teeth (3.1) occupied the greatest proportion of the index. The residents had a high prevalence of plaque (90%), calculus (80%) and periodontal disease; only 3% had a healthy periodontium while 97% had gingivitis, 53% supragingival calculus, 36% subgingival calculus and 11% subgingival and occlusal calculus. Mineralisation disturbances were found in seven residents, four with hypomineralised enamel and three with amelogenesis imperfecta. Conclusions: The findings show an extensive need for dental treatment and structured preventive care among the young adults in the CRRPH.

Key words: Oral health, disabled people, residential care, caries, periodontal disease

Introduction

Romania has, at present, a population of 22.4 million. Consequently, the number of children on the streets has increased (Haverdahl, 1995a; Moraru et al., 2007; Romania and Moldavia, 2001). Romania's former dictator, Nicolae Ceausescu, was the founder of a law in 1966 which forbade abortion and contraceptives, aiming to increase the population of Romania. Women were required to have at least five children before being allowed to have an abortion. Routine gynaecological checks were carried out on women in an attempt to stop illegal abortions (Haverdahl, 1995a; Romania and Moldavia, 2001). Romania’s former dictator, Nicolae Ceausescu, was the founder of a law in 1966 which forbade abortion and contraceptives, aiming to increase the population of Romania. Women were required to have at least five children before being allowed to have an abortion. Routine gynaecological checks were carried out on women in an attempt to stop illegal abortions (Haverdahl, 1995a; Romania and Moldavia, 2001). Unfortunately, these actions had other consequences such as unwanted and disabled children who were abandoned by their parents at birth and incarcerated in residential settings (Haverdahl, 1995a; Haverdahl, 1995b). During Ceausescu's totalitarianism, disabled children were considered to be impossible to rehabilitate, incurable and therefore, useless in society (Haverdahl, 1995a). In the eyes of society the value of human beings was equal to their achievements. These views and Nicolae Ceausescu affected the disabled children's fate at the residences. They were not allowed to leave their beds, learn to walk, talk, go to the bathroom or eat by themselves (Haverdahl, 1995a).

According to official figures the total number of people with disabilities in Romania, in March 2006, was 460,698, of which 55,591 were children and 405,106 adults; among them was a group of 17,959 adults in residential care, most of them aged 25–39, and 354 children. The distribution of the type of disability indicated that 90,400 people had an intellectual impairment and 67,152 had somatic disability. Approximately 25,000 people had additional disabilities.

The social protection of people with disabilities in Romania is run by ANPH-Autoritatea Nationala pentru
Persoane cu Handicap Romania, and local administration. ANPH implemented standardised quality services to the special needs population. However, a general analysis of the impact of these standards, carried out in 146 of 170 residential centres, showed that compliance occurs in only 55.3% of settings. In 47.3% residential settings, these standards are not the highest priority for the managers (Autoritatea, 2004).

It is well known that the poor care given within residential settings during the communist period extended beyond the revolution in 1989. Some of the non-disabled children abandoned in orphanages become intellectually delayed as a consequence of poor care and disregard by the staff. Even though the situation is poor, some changes in attitude toward disabled children have been observed recently. Changing the attitudes of an entire population towards disabled children is a task that will take much longer (Haverdahl, 1995a).

The Recuperation and Rehabilitite Center for Persons with Handicap (CRRPH) located in Sector 2 in Bucharest is one of five residential centres in Romania that has changed dramatically since the revolution in 1989, having in recent years become a residential centre for young, disabled adults. The centre is a non-profit institution, financed mainly by the government and run by 164 employees with the main task of providing rehabilitation and care for 155 young adults with multiple disabilities. The institution has six, 26 bed, dormitories. Each dormitory is run by two assistant nurses. The objectives of CRRPH and the social authorities of Sector 2 are to help the disabled patients become integrated in society and live outside the residential centre. However, this is a formidable task as the personnel are confronted with the severe problems of the young people having known nothing but residential care (Haverdahl, 1995a; Romania and Moldavia, 2001).

Several studies have reported that disabled persons have a higher prevalence of untreated decayed teeth and periodontal disease (Pieper et al., 1986; Pregliasco et al., 2001; Shaw et al., 1990; Tiller et al., 2001). The major problems being lack of oral hygiene (Pregliasco et al., 2001; Shaw et al., 1986; Shaw et al., 1990; Tiller et al., 2001). This is often combined with risk factors such as eating soft foods, muscle function anomalies, bruxism, enamel aberrations, gastro-oesophageal reflux, anticonvulsant medication and morphological alterations of oro-facial structures (Pregliasco et al., 2001).

The aim of this study was to assess the oral health status and evaluate the treatment needs of young adults with multiple disabilities in residential care in Bucharest, Romania.

Methods

Subjects

A clinical examination was offered to all 155 patients in the residential centre. As most of the patients were not able to give informed consent for this, ethical considerations were reviewed and discussed with the Chief Medical Officer of the centre, Dr. Emanuel-Gabriel Botnariu, who gave consent to carry out the investigation. Due to the long period where there had been no dentist at CRRPH, it was seen as necessary to perform oral examinations on all individuals in order to plan treatment. None of the patients was in any way forced to co-operate but through sensitive and careful management and with the help of a physician (MG), good communication was established and the patients cooperated adequately for a clinical examination.

Clinical examination

The clinical examination was based on criteria from the World Health Organisation for field studies (WHO, 1997). The following were recorded: personal data (age and gender), medical conditions, functional disabilities and medication, dental status, treatment need, periodontal status, mineralisation disturbances, deviation in number of teeth, and other findings. Dental caries was recorded when it involved the dentine; enamel only lesions were not recorded.

The subjects were examined by two of the authors (PG, JGN) performing the examinations together. Prior to the clinical examination, the criteria were thoroughly discussed and during the clinical examinations both examiners took an active part. For ethical and practical reasons no re-examination was performed. The examination of the patients was undertaken either in the dental surgery in the residential centre or in the dormitories or outside the building. Standardised light conditions or a flashlight, a plane mouth mirror, gloves and hand disinfectant were used. Probes were generally not used and in some cases, a mirror could not be used because of the patient’s dental fear. The use of gloves and hand disinfectant was essential since some patients were infected with Hepatitis B. Radiographic examination was excluded from this study since the institution did not have any X-ray equipment.

Results

Clinical examinations were carried out on 155 residents (70 females, 85 males). One subject had such pain from the mouth that he refused to cooperate; all his teeth had, however, recently been extracted under general anaesthesia. Emphasis was placed on making the subjects feel secure and comfortable in the dental situation. One of the patients knew some English and was thus of some assistance in individual in order to plan treatment. None of the patients was in any way forced to co-operate but through sensitive and careful management and with the help of a physician (MG), good communication was established and the patients cooperated adequately for a clinical examination.

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The examinations were carried out in the dental surgery for 60 subjects. Sixty nine subjects were examined in their dormitories sitting in a chair/ wheelchair or lying in bed. The remaining 26 were examined outdoors seated in wheelchairs or lying on blankets (Figure 1).

The age of the subjects ranged from 16 to 29 (mean 21.5 years) years, excluding two children still living at
Clinical Findings

Caries

All figures concerning caries refer to cavitared caries. The mean DMFT value for all 155 patients was 6.6 (SD ± 8.77). If the 44 patients with DMFT = 0 were excluded, the mean DMFT was 9.24 (SD ± 9.12). The components of the DMFT index are given in Table 1 for the total group and for those having mean DMFT values > 0. The most prominent parts of the DMFT index were the values for D and M; 155 subjects with mean values of D = 3.95 and M = 2.38. For the group with a mean DMFT > 0, the figures were D = 5.52 and M = 3.32, respectively (Table 1). There was no statistically significant difference in the values between females and males.

Three patients were edentulous or had only roots remaining (Figure 2), while 38 (25%) had a complete dentition of 28 teeth. Bridge work was found in the upper anterior sextant in one patient. The number of missing molars, premolars and canines/incisors was 114, 68 and 145, respectively. For fillings, the corresponding numbers were 29, 5 and 10.

Restorative treatment need

The restorative treatment need was based on the clinical findings and a realistic view as to how it could be undertaken within the present resources. All the subjects were unfamiliar with dental examinations, restorative and preventive treatment and accepting local anaesthetics and would require significant acclimatisation. When treatment of teeth related to traumatic injuries of incisors was included, 126 patients needed some sort of restorative treatment, pulp treatment or extractions (Figure 3). Thus, the total treatment need was for 612 fillings, pulp treatment or extractions with the main focus on fillings and extractions. In fourteen patients, the caries was such that extraction of all teeth was necessary. There was no statistically significant difference between females and males concerning restorative treatment need.

Periodontal findings

Visible plaque was found in 140 patients. In bedridden patients, large amounts of food remnants were found, indicating lack of oral hygiene measures (Figure 4). The finding of gingivitis in all but one patient, and bleeding on digital pressure, showed that tooth brushing was not performed daily. Calculus was mainly found in the lower lingual region of the incisors in 123 patients.

| Table 1. Mean values for D, M, F and DMFT for all patients (n = 155) and for those patients with DMFT > 0 (n = 111). |
|---------------------------------|-------------|-------------|-------------|-------------|
| No of. patients                 | D (Mean ± SD) | M (Mean ± SD) | F (Mean ± SD) | DMFT (Mean ± SD) |
| 155 all subjects                | 3.9 ± 7.2    | 2.4 ± 5.3    | 0.3 ± 0.9    | 6.6 ± 8.8    |
| 111 subjects with DMFT > 0      | 5.5 ± 8.0    | 3.3 ± 6.0    | 0.4 ± 1.1    | 9.2 ± 9.1    |

Figure 1. Examination of a severely disabled patient lying on a blanket outdoors
calculus was present in 58 cases and in 15 of these the calculus covered all teeth entirely, including the occlusal surfaces (Figure 5). Gingival recession was seen buccally on the mandibular incisors in seven patients. There were no statistically significant differences observed between females and males.

**Periodontal treatment need**
All patients had a need for periodontal treatment including removal of calculus and professional cleaning. As part of oral hygiene, personnel in the residential centre would need information and instructions on how to maintain good oral hygiene for the patients.

**Other findings**
Developmental disturbances in the enamel were only found in six patients, two having local enamel hypoplasias, one hypomineralised enamel in the first molars. Three patients exhibited a general hypomineralisation in the enamel of all teeth, possibly indicative of amelogenesis imperfecta. Traumatic injuries were found in 28 patients with unknown reasons. The majority of the injured teeth were in the upper jaw (28 teeth) and only two in the lower jaw. None of the patients showed any marked problems with dryness of the mouth and only a few had hyperplastic gingiva, due to medication. Black discolouration was found on teeth in five patients, due to antibiotic treatment.

**Discussion**
The study has shown that people in residential care in Bucharest, Romania, have severe oral health problems with a high need for treatment. There are limitations in this study, the conditions for the oral examination were not ideal and no X-ray equipment was available. Although some patients were difficult to examine, it was possible to satisfactorily assess the caries and periodontal conditions. Despite these limitations the results of this study are of great importance in determining the oral health status for these people in residential care and to serve as a basis for future treatment strategies.

With the aid of dental and medical files it could be established that missing teeth were extracted due to caries. The high DMFT values, the periodontal conditions and the huge treatment need found at CRRPH, are in accordance with what has been found in studies of people with intellectual disabilities and those with multiple impairments (Costello, 1990; Evans et al., 1991; Pregliasco et al., 2001; Shaw et al., 1986). In a previous study of oral health status of an industrial population in Romania in the mid 1990s, similar DMFT values and periodontal conditions were recorded in a group of 18–24 year olds (Petersen and Tanase, 1997). These same authors emphasised the need for reorientation of oral health care in Romania, however, little has been accomplished.

The small proportion of the DMFT index occupied by the F component is a consequence not only of the inadequate dental service at CRRPH, but also that extractions had evidently been the first treatment choice. Clinical stud-
ies of intellectually disabled or psychiatric patients have shown that extraction therapy is frequent among these patient groups (Costello, 1990; Pregliasco et al., 2001; Shaw et al., 1986; Shaw et al., 1990; Tiller et al., 2001). The high treatment need found among the subjects in this study is not uncommon among disabled people (Costello, 1990; Holland and O’Mullane, 1986; Pieper et al., 1986; Pregliasco et al., 2001; Tiller et al., 2001). It has been shown that disabled individuals living in the community had significantly higher levels of untreated decay than those in residential care, due to control of their own diet, with more opportunities to buy and eat cariogenic food, increasing the risk of developing caries (Tiller et al., 2001). However, individuals in residential care had significantly more teeth missing than individuals living in the community (Tiller et al., 2001).

The physician responsible for the patients’ diet was fully aware of the relation between caries and sugar. The last few years have shown a change in the diet with sugar only used when serving tea. Most patients had medication that potentially decreased the saliva production. Liquids were regarded as important, due to the risk of dehydration.

Gingival hyperplasia was found in some patients, which is a side effect of anti-convulsants, narcoleptics and antidepressant medication, in combination with poor oral hygiene (Modéer et al., 1998). Dryness of the mouth is another side effect of these medications, but only one patient showed signs of this. Gingival recession, seen in a few of the patients, has been noted in the literature among severely intellectually impaired people (Modéer et al., 1998).

Oral hygiene among the patients at CRRPH clearly shows the limited ability of the patients to clean their teeth. Almost all need help from staff in the centre. These findings are in sharp contrast to the results of a questionnaire among the personnel at CRRPH, where it was claimed that the patients received daily help with their oral hygiene (Moraru et al., 2007). Given the state of oral hygiene in the residents, the conclusion to be drawn from this was a lack of knowledge among personnel at the residential centre, something which was also noted in a study in 1993 (Petersen et al., 1993).

Several studies have shown poor levels of oral hygiene and a high prevalence of calculus and periodontal disease in intellectually disabled people (Pieper et al., 1986; Pregliasco et al., 2001; Shaw et al., 1990; Shaw et al., 1986; Tiller et al., 2001). However, there is no reason to assume neglect by the staff but rather, lack of knowledge and training on how to manage disabled patients (Pregliasco et al., 2001). Significant deposits of plaque, gingivitis and calculus covering the occlusal surfaces were noted among the subjects, reflecting the urgent need to improve knowledge in oral hygiene practices and promote structured programmes in preventive dentistry.

Several patients were diagnosed with Hepatitis B and staff at the centre were aware of the risk that other patients may also be infected. This may, to some extent, explain why some patients do not receive necessary help with their oral hygiene, since adequate knowledge of cross infection control is lacking. A shortage of resources also makes it difficult to acquire items such as gloves and toothbrushes.

Other studies have shown that lack of oral hygiene may be due to inappropriate knowledge and skills of the nurses.
to perform oral health care and therefore, lack of skills to train care assistants (Frenkel et al., 2001; Frenkel et al., 2002; Lundin, 2003; Wårdh et al., 1997; Weeks and Fiske, 1994), who perform up to 90% of all personal care of the patients (Frenkel et al., 2001; Lundin, 2003). Poor oral hygiene may also be explained by lack of time, staff, or availability of skills and oral hygiene aids (Frenkel et al., 2001; Frenkel et al., 2002; Moraru et al., 2007; Weeks and Fiske, 1994). Oral hygiene is an essential component of daily hygiene for such residents (Frenkel et al., 2002). Well performed oral hygiene may increase the self-esteem of disabled patients and increase their acceptance in society (Moraru et al., 2007; Weeks and Fiske, 1994).

The best means of establishing good dental hygiene in intellectually impaired people are not only through increased efforts and expertise of dental professionals but also systematic instructions in self-care (Shaw et al., 1986). In order to gain control over the situation at CRRPH, education in oral health and instructions and training to help the patients would be a first step. A structured preventive programme, guided by the dentist, combined with performing necessary dental care could dramatically change the situation (Pieper et al., 1986). Change of attitudes and interest is essential as well as a simple follow-up system. Oral health improvement would be beneficial not only for the patients but also for the personnel, as they would see the results of their efforts. Plans are in place to help the residential centre through a collaborative project between CRRPH, the Dental Faculty at the University of Bucharest and the local IM-office (Swedish organisation for Individual Humanitarian Help) in Bucharest (www.manniskohjalp.se/asp/start.asp) and the Faculty of Odontology in Göteborg, Sweden. Great improvements may be achieved by simple means if proper knowledge and change of attitudes among the staff at all levels could be established.

Conclusions

The findings show an extensive need for dental treatment and structured preventive care among the young adults in the CRRPH.

Acknowledgments

We wish to express our sincerest gratitude to IM in Bucharest, especially to the manager, Emilia Sandu, for all help, lodging and support we received, enabling us to carry out this study. We also wish to express our gratitude to the following Swedish companies: Athena Nordic, TePe, OralB, Dentaco, Colgate and Pepsodent, who so kindly and generously provided CRRPH with toothbrushes and toothpaste.

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