

## ORAL HEALTH

## **ORAL HEALTH AND ORTHODONTIC TREATMENT NEED PRE- AND SCHOOL CHILDREN IN ZAGREB (210)**

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Orthodontic treatment need can be defined from a dental professional's viewpoint through various occlusal indexes (normative need) that attempt to evaluate malocclusion according to severity. One widely used Occlusal anomalies are considered to be deviations from the norm rather than a disease. Index is the index of orthodontic treatment need (IOTN), which incorporates ranking of various occlusal traits in terms of their significance for a patient's dental health (DHC) and aesthetic impairment (AC). The objective assessment of malocclusion is important when documenting the prevalence and severity of malocclusion in population group. Such data are essential for epidemiologists, health administrators planning the costs of health treatment, and training programs for specialists. The effective organisation and planning of orthodontic services within a public health system requires accurate data on the orthodontic treatment needs of the child population. Such data are not available for the Republic of Croatia. Therefore Department of Orthodontics, School of Dental Medicine, University of Zagreb started a project, which is supported by local government to evaluate oral health and orthodontic treatment need in Zagreb for population aged 5 to 18 years. The examination will be held in kindergartens and schools. Subjects will be randomly selected, and the plan is to examine cca. 10 000 pupils. The collected data will be statistically evaluated and will be essential for planning the training programs for specialists and reorganisation of orthodontic service in the city of Zagreb.

*Key words: oral health, orthodontic treatment need, Zagreb*

## INCREASE OF IMPACTED WISDOM TEETH IN 20 YEARS (83)

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**INTRODUCTION:** Among 20-year-old students in Finland, the percentage of students with at least one unerupted or partially erupted wisdom teeth is 84%. This is a high number. This figure can be compared to the 81% of the same students with at least one tooth damaged by caries. The main problem with wisdom teeth is the imperfect eruption which will conclude with caries, infection of the surrounding soft tissue, damage of the neighbouring tooth, cysts, and even carcinoma. Up to the age of 32-years, so many as 67% of students have had at least one wisdom tooth extracted. The aim of this study was to examine the change in the clinical and radiographic status of wisdom teeth among successive generations of 20-year-old university students in the years 1982 and 2002.

**SUBJECTS:** The subjects were first-year university students at the University of Helsinki in 1982 and in 2002. The first group (N =179; 58 men and 121 women) was born in Helsinki in 1961 or 1962 and lived in Helsinki in 1982. The second group (N = 232: 50 men and 182 women) was born in Helsinki in 1981 or 1982 and lived in Helsinki in 2002. Mean age of the students was 20, 2 and 20, 7 years (SD ± 0, 6 years for both).

**METHODS:** All patients were clinically examined and panoramic radiographs were taken. Differences between groups were tested with chi-squared test.

**RESULTS:** The number of unerupted wisdom teeth in the lower jaw had increased from 26% to 41% in men (P<0.05). The number of erupted wisdom teeth had decreased both in the upper and the lower jaw in women (39% vs 29%; P<0.01 in upper jaw, and 16% vs. 10%; P<0.05 in lower jaw). Related to inclinations of wisdom teeth in men, the number of vertical inclinations in lower jaw had decreased (53% vs. 28%, P<0.01) and mesioangular inclinations had increased (33% vs. 56%, P<0.01).

**DISCUSSION:** The results indicated that along with the generations, the number of imperfectly erupted wisdom teeth has increased. Secondly, the results indicated that the position of the wisdom teeth in bone has become more difficult. These changes were especially evident among male students.

**CONCLUSION:** Difficulty of eruption of wisdom teeth has increased during the 20 years. This means that more and more wisdom teeth need to be treated which challenges the dentists and oral surgeons.

*Key words: dentistry, wisdom teeth, students, development*

## **TRAUMATIC INJURIES TO THE TEETH AT STUDENTS OF THE UNIVERSITY OF LJUBLJANA (85)**

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Traumatic injuries to the teeth are mostly results of road accidents, sport injuries (boxing, judo, basketball, handball, skiing, etc.) and street violence.

Injuries are recognized as contusion of the tooth, subluxation of the tooth, luxation of the tooth and extrusion of the tooth.

Diagnostic process includes: anamnesis, checking of soft and hard tissues in oral region, checking the looseness of a tooth, checking the sensitivity to percussion, to cold and to electrometric test. We always use an X-ray diagnostics.

My experience, most of the injuries suffered by students of the University of Ljubljana are fractured crowns of maxillar incisors. These injuries have to be treated with composite tooth fillings. I often observe that after some time (months or even several years) the nerve of the tooth necroses. It is caused by interruption of the nerve during the contusion. Such a tooth requires immediate endodontic therapy and in a few years consequensed bleaching of the tooth or even treatment with fixed prostodontic restorations (veneer or pin and crown).

To protect the teeth and other oral structures we manufacture the individual mouthguards for sportsmen. Our patients should be also acquainted to the fact, that those who have protrusion of maxillar incisors and bad mouth barrage, those will be more frequently exposed to the traumatic injuries to the teeth. These malocclusions should be orthodonticly treated.

On one hand the number of sport related injuries is not increasing anymore, while on the other hand the street violence as a cause of the injuries is in increase.

*Key words: traumatic injuries to the teeth, students, mouthguard, orthodontic treatment*

# **THE EMERGENCE OF PERMANENT TEETH IN FLEMISH CHILDREN AND THE IMPACT OF CARIES EXPERIENCE IN PRIMARY MOLARS ON THE EMERGENCE OF THEIR SUCCESSORS (99)**

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**INTRODUCTION:** Review of the literature on permanent tooth emergence revealed several methodological problems (small sample size, uncertain representativeness, inappropriate statistical analysis, ...). The aim of the present study was twofold: 1) to establish actual and reliable emergence ages of permanent teeth in Flemish children and 2) to analyze whether the emergence of the successors of deciduous molars with a history of caries was delayed or advanced.

**SUBJECTS:** For this purpose data available from the Signal Tandmobiel® project were used. In this longitudinal epidemiological survey data were collected from a representative sample of 4468 children (born in 1989), examined yearly (between 7 and 12 years of age) by trained dentist-examiners.

**METHODS:** Caries experience and tooth emergence were recorded by direct inspection. Log-logistic survival analyses were performed to calculate median emergence ages.

**RESULTS:** The analysis indicated significantly earlier emergence ages in girls than in boys. The emergence pattern turned out to be symmetric in both sexes; most mandibular teeth emerged significantly before their antagonists, in boys as well as in girls. The emergence of the maxillary and mandibular premolars was accelerated by 2 to 8 months when its predecessor had been decayed and or restored but had not been extracted. Premature loss of maxillary primary molars resulted in a significant acceleration of the emergence of the premolars; this was not observed in the mandible. **CONCLUSION:** Actual data on permanent tooth emergence in Flemish children are now available. When considering permanent tooth emergence ages, caries experience in the primary dentition should be taken into account. (Supported by Unilever, Belgium – Research Grant OT/00/35, Catholic University Leuven.)

*Key words: permanent tooth emergence, dental caries, primary molars, permanent first molars*

## **CARNIVAL OF SMILES ORAL HEALTH PROMOTION PROGRAM/CAMPAIGN (162)**

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**INTRODUCTION:** For over more than 15 years oral health services in Health Centres in Serbia, Institute for Public health of Serbia and Institute of Public Health Belgrade have been organised traditionally Oral health week, usually by the end of MAY. In 2004, for the first time in Belgrade we organised central city manifestation Carnival of smiles.

**SUBJECTS:** All preschool and school children, their parents and peers and professionals in schools and health sector.

**METHOD:** It is social medicine descriptive study base on campaign reports. of participation the program and Campaign.

**RESULTS:** More than 300 preschool/school children and more than 50 teachers and health staff from Belgrade private and public oral Health Care Sector Have participated. Also over than 1000 citizens have paid their attention on CARNIVAL OF SMILES.

**DISCUSSION:** High motivation of all participants is sign to continue all efforts to erase inequality of oral health toward integral health.

**CONCLUSION:** Well-created program such as this gave results or rise up awareness of oral health importance among preschool/school children and their families.

*Key words: oral health promotion campaign, preschoolchildren, scholars*

# THE ASSOCIATION OF PARENTAL SMOKING AND CARIES EXPERIENCE IN PRE-SCHOOL CHILDREN (98)

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**INTRODUCTION:** The study aimed to explore the association between parental smoking habits and caries experience in young children.

**SUBJECTS:** Cross-sectional data from 1250 3-year old and 1283 5-year old children from 4 geographical areas in Flanders (Belgium) were analysed.

**METHODS:** Children were examined at school by 8 trained dentist-examiners, using standard criteria and calibrated examination methodology. Data on oral hygiene and dietary habits, oral health behaviour, socio-demographic variables and parental smoking habits were obtained through structured questionnaires, completed by the parents.

**RESULTS:** Roughly, 7% of 3-year-olds and 31% of 5-year-olds presented with visible caries experience (i.e.  $d3mft > 0$ ). In both age groups, about one third of the parents reported a smoking habit. With caries prevalence as the dependent variable, simple logistic regression analysis - with correction for examiner misclassification - revealed that parental smoking was a significant independent variable. In 3-year old children, the effect of family smoking status was not longer significant after controlling for age, gender, socio-demographic characteristics, oral hygiene and dietary habits. In the oldest age group the significant relationship between parental smoking habits and caries experience persisted after adjusting for the other evaluated variables (OR= 3.36; 95% CI: 1.49-7.58).

**CONCLUSION:** This study confirms the important impact of parental smoking habits on children's oral health.

This study was supported by GABA International and GABA Benelux.

*Key words: parental smoking, dental caries, pre-school children*

## STRESS WEARS DOWN YOUR TEETH (34)

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The worsening of oral health caused by mental health problems is seen and cared for daily in the students' dental care office. Students are generally unaware of the connection between stress and oral health, as are some health care professionals. The name of the guide written for students, "Stress wears down your teeth", is very true. The cause-consequence effects of stress are often seen in teeth and the teeth can actually wear or shorten.

When stressed, a person can start grinding his or her teeth unconsciously especially at night, sometimes also during the day. You do not necessarily know about your nightly grinding until somebody tells you about it. Grinding can cause all kinds of ailments.

Teeth grinding wears down and shortens the teeth. The teeth rub against each other and the occlusal surfaces become smooth. As an end result, you lose irreplaceable tooth tissue and the change is always irreversible.

The temporomandibular dysfunctions and pain caused by teeth grinding heal by themselves most of the time when the stress eases off. Teeth grinding is a general consequence of stress, not an independent illness. Treating teeth grinding is symptom-related treatment, which does not remove its cause, stress.

Inclination to teeth grinding perseveres and with time teeth grinding comes and goes together with stress. Awareness of your own ailments and their reasons teaches you how to live with them.

Temporary teeth grinding or biting the teeth together is a common ailment with students.

The guide tells about the connections between oral health and stress. The information aims at increasing the self-knowledge of the oral symptoms, taking care of yourself, as well as the need to seek for dental examination and treatment.

*Key words: stress, bruxism*

## HOME ORAL CARE OF THE UNIVERSITY STUDENTS IN TAMPERE (39)

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**INTRODUCTION:** Finnish Student Health Service by Tampere University was founded in 1960. In Tampere are two universities and about 20 000 students. From the beginning the dental care has been a part of student health service.

**SUBJECTS:** The aim of this study was to find out oral habits of the students and their oral health related knowledge.

**METHODS:** A questionnaire was distributed to first and second year students who had their first dental check up in our clinic. Questionnaires consisted of multiple choice questions concerning dental hygiene, eating habits and oral health related knowledge.

**RESULTS:** We got 437 answers during October 2004 and March 2005. There were 64.4 % female students. 73.7 % brush their teeth twice or three times a day and 13% of them use electric toothbrushes, 97.3 % use toothpaste with fluoride but 42.7 % don't use dental floss at all. 86.8 % knows that careful oral hygiene can prevent calculus, but connection with bleeding gums and periodontal diseases are not well known.

**DISCUSSION:** Motivation for effective plaque control is one of the most critical and most difficult elements of long-term success of maintaining oral health. Most of the students already have the information needed, but the theory doesn't reflect in practice.

**CONCLUSION:** The frequency of tooth brushing is good among the students but the frequency of interdental cleaning is not good enough. The students want and need more personal advice for oral hygiene.

*Key words: oral home care, tooth brushing, use of dental floss*

## HOW UNIVERSITY STUDENTS FEEL ABOUT THEIR ORAL HEALTH (40)

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**INTRODUCTION:** Finnish Student Health Service is a foundation set up 1954 by National Union of Students, financed by Social Insurance, the students and student union, the university cities and Ministry of Education. It covers all university students in 16 health centres providing preventing health care, medical care, mental health care and dental health care.

**OBJECTIVE:** To ascertain how often the students experience pain in their mouth and how soon a student seeks an appointment, when she/he feels pain or other symptoms in her/his mouth and do the symptoms influence their studies or lifestyle.

**METHODS:** A questionnaire was distributed to students who visited dental clinic in September to December 2003. Completed questionnaires were returned by 360 students. Questions included how healthy they felt their mouth, students' view of the reason for a dental appointment, how soon they contact the clinic and their dental history.

**RESULTS:** It was no differences between male and female. We divided the patients into two groups, students who had acute symptoms and those who came to dental check up. The students who visited the acute clinic had experienced significantly more toothache and had more difficulties eating than the ordinary patients. 33% of the acute patients delayed 14 days or more before they contacted the dental clinic.

**DISCUSSION:** In general the students have seldom pain or other symptoms. They are well aware of their oral health status and what kind of treatment they need. Even when the patient feels toothache, she/he delays to make contact with the dental clinic.

**CONCLUSION:** University students are mostly young and they have had before possibility to free public dental care they don't have heavy oral symptoms during their studies.

*Key words: toothache*

## **DROP OUT OF DENTAL TREATMENT AMONG FINISH STUDENTS (A FOLLOW UP OF A 2004 STUDY) (43)**

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**INTRODUCTION:** In 2004 we designed a study to identify the cause of drop out from dental treatment among Finnish students and raise the awareness of dental care.

**SUBJECTS:** Between 01.09.2001 and 31.12.2002 our organization provided check –up and treatment plan for 3408 students. 16, 8% didn't complete their prescribed treatment, with 45, 05% out of them dropping out before extractions (mainly wisdom teeth). This follow up is meant to analyze this category in respect to D and DMF indexes and the reasons for treatment quitting.

**METHODS:** A questionnaire regarding cause of drop-out and awareness of it has been sent to 165 students and 71 have answered. We asked if they knew that their treatment should continue and when that was the case, if they know what therapeutic steps remained unfulfilled. We were interested in finding out the reasons for dropping out in order to help future patients to stay on treatment as needed.

**RESULTS:** There were no significant differences between men and women that dropped out. The dropped out D index is often null or very small (70, 87% vs. 90% of those who dropped out before extractions), so they usually have little or no dental problems. The most frequent cause for disruptions of treatment is lack of symptoms (consistent with previous comment) followed by appreciation of time between appointments as unreasonable and negligence. Fear of dental treatment motivates drop-out in only 8, 79% vs. 13, 88% for those who drop out before extractions (among them this being the 3rd cause as frequency).

**DISCUSSIONS:** 75, 5% of the drop-outs knew that their treatment should continue, with only 55, 71% being aware of unfulfilled therapeutic steps. Out of those who dropped out before extractions, 76, 66% were aware that their treatment is incomplete and 46, 66% knew exactly what their remaining treatment should comprise. Cause of drop out varies widely. 37, 80% of those who dropped out before extractions came back in treatment (mostly with emergencies) within 6 months after first study.

**CONCLUSIONS:** Among students with little dental problems it may be helpful to reinforce the importance of treatment, regardless of symptomatology.

*Key words: drop-out, D-index, fear of dental treatment*

## **ORAL HEALTH CARE FOR SCHOLARS IN BELGRADE (159)**

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**INTRODUCTION:** In previous century oral health care for school age population in Belgrade was neglected. All potential of society was directed to other vital health problems.

**SUBJECTS:** Scholars oral health status and oral health care provided by public health care system in Belgrade.

**METHODS:** It is social medicine retrospective evaluation study based on routine statistical reports analysed by statistical methods in SpSS package. Indicator for measuring quality of oral health care for scholars is average DMFT at 12 years old scholars in Belgrade for five years period.

**RESULTS:** At start of evaluation period average DMFT among 12 years ols scholars was 2,68 and by the end of five years period average DMFT was 3,13.

**DISCUSSION:** Oral health care in Belgrade had not been well organised for targeted population, although man staff number in oral health care were better than in other European countries. Ratio dentist: children was 1:900.

**CONCLUSION:** Old dental office equipment, lack of dental materials and lack of professionals motivation were reasons of decreasing oral health status for scholars.

*Key words: oral health car, scholars, oral health status*

## **TOBACCO USE AND PERIODONTAL DISEASES AMONG HIGH SCHOOL PUPILS (180)**

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**INTRODUCTION:** Tobacco use is one of the most importunate risk factor not only for total health, even more for oral health. High prevalence of tobacco use among high school pupils is predominant factor for periodontal diseases.

**SUBJECT:** High school pupils, oral diseases, tobacco use.

**METHOD:** It is retrospective, descriptive evaluation study based on statistical analysis of routine stomatological documentation. Materials are all pupils in high schools in Belgrade municipality Zvezdara. Indicator for measuring periodontal health status is CPITN.

**RESULTS:** CPITN=6,63/3 sextants among schoolchildren age 15-19 years. Recommendation of WHO is CPITN=0/3 sextants for high school children .38%off allhigh school pupils population both gender are permanent tobacco use.

**CONCLUSION:** High prevalence of tobacco use among youth is in high correlation with periodontal diseases.

*Key words: tobacco use, periodontal diseases, oral health*

## **TEMPOROMANDIBULAR DISORDER AMONG ADOLESCENTS (199)**

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**INTRODUCTION:** The aim of this study was to analyse the frequency of temporomandibular disorders and to identify the most frequent causes of temporomandibular disorders among adolescents.

**SUBJECTS AND METHODS:** A random sample was selected of 60 adolescents, aged 14 years, 29 girls and 31 boys. All adolescents were patients of our Department of Pedodontics. The clinical examination was conducted by one examiner and the child was seated upright during the examination. The examination included the following aspects: temporomandibular joint sound, opening deviation, associated muscle disorder and jaw postures. Data comparisons were carried out with Student's t-test.

**RESULTS:** Thirteen (21.6%) of subjects had one or more signs of TMDs with no significant difference between males and females. The most frequent dysfunctions were TMJ sounds (clicking and crepitus) and associated muscle disorders (TMJ tenderness and muscle tenderness). The most frequent jaw posture among subjects with TMJ disorders was class II (61.5%).

**CONCLUSION:** Since the temporomandibular disorder signs and symptoms are presented at the adolescent age, it would be important to identify subjects at high risk of having temporomandibular disorders and to intervene at appropriate time.

*Key words: TMJ, TMD, adolescent*

## **MORPHOLOGICAL FEATURES OF PERMANENT MOLARS IN MENTALLY RETARDED CHILDREN (200)**

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**INTRODUCTION:** The aim of this study was to evaluate the prevalence of morphological anomalies in number of cusps among the second lower permanent molars with mental retardation comparing the healthy one.

**SUBJECTS AND METHODS:** The sample consisted of 100 patients (47 girls and 53 boys) who are mentally retarded and live in the Institution for Children with Developmental Disturbances, Zagreb. The control group consisted of 100 healthy children (50 girls and 50 boys) from our Department of Pedodontics. All patients were clinically examined with dental mirror and probe.

**RESULTS:** Statistical analysis (Student's t-test) showed a significantly high difference ( $p < 0.001$ ) in number of cusps between two investigated groups. However, second lower permanent molars in mentally retarded children mostly have five cusps (three buccally and two lingually) so those teeth look like the first lower permanent molars.

**CONCLUSION:** The most of mentally retarded children have some diagnosed chromosomal aberration; it could be supposed that the chromosomal damages or changes in chromosomal chart take part in specific occlusal morphology of genetically unstable lower permanent molars.

*Key words: morphology, molar, retardation*

## TRUSTING RELATIONSHIP BETWEEN DENTIST AND CHILDREN (203)

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Behaviour management is only in part a science and must be recognised as an art form to health care delivery. The goals of behaviour management are to achieve good dental health in the child patient and to help develop of child positive attitude toward dental health. The objectives of behaviour management are to establish communication and to foster education, thereby alleviating fear and anxiety and building a trusting relationship between dentist and children. All decisions regarding behaviour must be based on a benefit versus risk evaluation.

A fear is the main reason of noncooperative behaviour in dental treatment. Communication is important to the management of child behaviour by the dentist. Enhanced communication and partnership building improves comprehension and compliance with dental treatment. Effective verbal communication is essential for successful dental treatment. Improving verbal conversational skills, emphasising certain strategies and improving linguistic abilities will contribute to better communication between child and paediatric dentist and to better cooperation and success in treatment.

Disruptive behaviours particularly from those lacking in cooperative ability often are prompted by the need to protest an unpleasant situation and the impulse to protect oneself from perceived danger. Such behaviours, depending on the patients' age and cognitive ability should be seen as an attempt of the child to cope with a frightening situation. The inherent challenge for both clinician and parent is to avoid unpleasant and unproductive confrontations from the outset, and to create an environment to facilitate the child's ability to accept care, protect the child's self-esteem, foster a positive outlook toward care, and enhance the work quality of dental personnel.

There are many techniques a dentist can use to aid in delivering care to young patients. Since sedation polices are becoming more complex, enhancing the skills of all dentists and staff members in the best methods of nonpharmacological child management will be essential. Biobehavioral methods will gain prominence, along with better communication skills of the dental team.

*Key words: children, behaviour, dental health*

## **THE NEED FOR ORTHODONTIC TREATMENT IN THE ADOLESCENT POPULATION OF SPLIT (208)**

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Measuring and recording the prevalence of malocclusion and treatment need in a population is useful for the planning of orthodontic services. This study was designed to investigate the need for orthodontic treatment in the adolescent population of Split. The data were collected from a clinical inspection, with randomly selected 425 pupils (232 girls and 193 boys) from V. Gymnasium, Split, Croatia participating. The mean age of the subjects was 16.1 years (14-19). Need for orthodontic treatment was assessed using the Index of Orthodontic Treatment Need (IOTN) described by Brook and Show (1989) and modified by Richmond (1990). The index has two parts, the Aesthetic (AC) and Dental Health (DHC) components. The worse occlusal feature was recorded only. The examinations were carried out at school in natural daylight with a mouth mirror and the subject seated in an ordinary chair. Children who were receiving orthodontic treatment at the time of the examination were excluded from the survey. The overall prevalence of individuals needing orthodontic treatment in examined population was 76.5%. Grades 4 and 5 DHC were found in 19.5%, DHC 3 in 16.4% and DHC 2 in 40.5% of subjects. No need for orthodontic treatment according to DHC was found in 23.5% of the subjects. In 52.5% pupils scoring AC 1, 40% scoring AC 2, 7.5% scoring AC 3 and only 0.5% scoring AC 4 was found. The need for orthodontic treatment assessed by AC and DHC correlates in 44.9%.

*Key words: IOTN, adolescents*

# **ASSOCIATION BETWEEN PROFESSIONAL AND SELF-PERCEIVED ORTHODONTIC TREATMENT NEED AMONG THE CROATIAN HIGH SCHOOL STUDENTS (209)**

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The knowledge concerning the attitudes of patients to malocclusion is becoming increasingly important in orthodontics. The aim of this study was to investigate whether there was an association between professional and self-perceived orthodontic treatment need. The data were collected from a clinical inspection, with randomly selected 425 pupils (232 girls and 193 boys) from V. Gymnasium, Split, Croatia participating. The mean age of the subjects was 16.1 years (14-19). Need for orthodontic treatment was assessed using the Index of Orthodontic Treatment Need (IOTN) described by Brook and Show (1989) and modified by Richmond (1990). The index has two parts, the Aesthetic (AC) and Dental Health (DHC) components, but in this study only the AC was used. The children were invited to complete a questionnaire about treatment need and their appearance. The results suggest agreement between the professional and self-perceived orthodontic treatment needs. 57.4% were consistent when considering the category criterion. 64.7% of the subjects placed themselves in the category no treatment need (grade 1). Pupils dissatisfied with their dental appearance selected grades 3 and 4 more frequently than satisfied individuals.

*Key words: IOTN, aesthetic component, self perception*