

**AN ANALYSIS OF THE DENTAL HEALTH OF YOUNG ADULTS AND  
OTHER CORRESPONDING FACTORS AT A POLICE SECONDARY  
SCHOOL  
Phd thesis**

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## **1. Introduction**

The activities in the oral cavity form a basic part of our everyday life. Their effects may soon appear in the form of various oral symptoms, either internally or externally. Oral health can be linked to, a variety of socio-cultural and psychological factors. These factors include – amongst others – nutrition, oral hygiene, dental education, social-economic background, lifestyle and stress. All of these may influence the condition of a person's oral health. Making an early, clear diagnosis of detectable symptoms, and screening for these symptoms, is extremely important if we are to maintain and preserve long-lasting health of the oral cavity. In addition to the above-mentioned factors, an individual's personality, character and temperament may also have an influence on their oral characteristics.

The special training undergone in law enforcement schools takes place in a unique, closed society; boarding schools or institutes. All the students are over eighteen and have passed their G.C.S.E. examinations. The students' academic term is two years, after which they will join the armed forces as a Non Commissioned Officer. For these police students maintaining a healthy lifestyle, appropriate levels of physical fitness as well as the health of their body and soul are not only prerequisites for them to hold office but also basic requirements for future promotion. Act 57/2009 IRM- ÖM-PTNM lays out the fundamental requirements covering their general state of health (both physical and psychological) for the period of their employment. Application to join these law enforcement institutes takes place throughout the country. By studying the oral health of police students, and their related issues, we can primarily analyse this group and - under limited circumstances – we can gain an indirect insight into the oral health of Hungary's younger generation. Research into the relationship between a person's personality

and their oral health may necessitate a new approach to preventive dental health. Furthermore this endeavour might be conducive to the success of more widespread preventive efforts.

**2. Objectives** The basic programme target of the research is; developing strategies that can be used to guarantee the a successful programme of health consciousness, and of oral health, for the police students at Hungary's biggest law enforcement school, based on the available, comparable data of the oral health of the target groups and the details of other objectives in connection with the results.

**2.1 Analyses of the etiological and risk factors of caries** This covers the testing of nutritional and oral hygiene habits, the frequency of dental visits, social characteristics and research into certain aspects of the police students' family backgrounds.

**2.2. Analysis of the relationship between caries prevalence and the risk and etiological factors of caries amongst police students.**

**2.3. Analysis of the relationship between the personality(temperament and character factors) and oral health amongst police students.**

**2.4. Analysis of smoking and other healthcare habits in relation to oral health amongst police students.**

**2.5. Developing a preventive programme on the results of the above analysis of the connections discovered,** which will allow for the optimisation in the general state of health of future generations of young police students (with special emphasis on the role played by oral health). This programme could also be adopted, indirectly, nationwide to the same group as the police students.

**3. Methods**

*Our tests and research were conducted at the Law Enforcement Secondary School of Miskolc, which – of the four law enforcement schools in Hungary – is the biggest. Our research was carried out between 1<sup>st</sup> January 2008 and 31<sup>st</sup> March 2008 with a permit from the S.E. Regional Committee of Scientific and Research Ethics for Institutes (SE Regionális Intézményi Tudományos és Kutatásetikai Bizottság), permit number TUKEB108/2007. Participation in the tests was voluntary and, following a preliminary briefing, the students who wished to take part gave their consent in writing. We tested 792 students (age  $20.43 \pm 1.25$  [mean $\pm$ S.D.]) over the three month period. Of these students 715 (90.3%) were male and 77 (9.7%) were female, which is a typical reflection of this type of institution. We found no difference, with regards to the average age, between male and female students. Our sample may be regarded as a true representation of the percentage difference between male and female police officers in Hungary.*

### **3.1. Analysis of the caries etiological and risk factors**

The participants filled in a questionnaire on their social, nutritional and oral hygiene habits. The questionnaire was voluntary although the response was 100%. During the tests we used validated questionnaires, available in scientific literature (Madléna et al 1993, 2001). The questions in the tests referred to the students' family backgrounds (father's schooling, qualifications and number of siblings), their nutritional habits (how many meals per day, how often they eat sweets or drink soft drinks containing sugar), their oral hygiene habits (what do they clean their teeth with and do they use toothpaste that contains fluoride?) and the regularity of their visits to the dentist (when was their last dental appointment, did they attend the compulsory screenings – if yes were they the only occasions or did they attend more?).

While processing the data we also took into account where the students live so that we might determine any further links. 60.3% of the students came from small villages, 11.7% came from towns with a population of 100.000 plus, and

only 2.7% came from cities with a population in excess of 500.000.

As 90.3% of the participating students were male we paid no attention to the differences between the genders when processing the data.

### **3.2. Analysis of the relationship between caries prevalence and the etiological and risk factors of caries**

We carried out our tests on oral health in accordance with the criteria approved by the WHO (1997), in special dental chairs using optimum illumination with dental mirrors and probes. Throughout our observations we identified the number of decayed (D), missing (M) and filled (F) teeth and, using this information, we calculated the DMFT index. All participants were examined by the same dental examiner (F.I.) The clinical diagnostic criteria for dental caries were visually apparent cavitation, discolouration showing through enamel or visual evidence of recurrent caries. Radiographs were not used in this study.

### 3.3 Analysis of the relationship between personality

(temperament and character factors) and oral health

The students completed, on computers, a TCI (Temperament and Character Inventory) test (Cloninger 1987) comprising of 240 questions. It was taken by 100% of the students.

The system of interpretation for the results from the completed TCI tests is based upon the standard values of the total scores received in the seven dimensions of the test. Certain questions are attached to a given dimension and then divided in to sub-scales. According to Cloninger's theory the *seven dimensions* are; **temperament** includes novelty seeking, harm avoidance, reward dependence and persistence dimensions, whereas **character** refers to self-directedness, cooperativeness and self-transcendancy

*dimensions. With the exception of persistence all these dimensions are divided into sub-scales.*

Answers to questions in the seven dimensions are either yes or no (scoring one point or zero respectively), and the totals of these raw scores can be converted into standard point values called **T – values**. This conversion was carried out using the following equation (into T – value);  $T = (x_1 - \underline{x}_1 / s_1 * 10 + 50$  in which  $x_1$  is the total raw score (points) achieved on the scale,  $\underline{x}_1$  is the average value of the standard sample, and  $s_1$  represents its distribution (Cloninger et al 1994). During the standardisation we transform the average values of the scale so that its average values be equal to fifty standard values and the distribution could be referred to as ten standard values. Thus, the T – value of fifty is equal to the average value of the sample drawn into standardisation. The scores from the questionnaire scales show a more or less normal distribution. The meanings of the various T-values are shown in the Table 1.

T-value	Meaning	Sample drawn into Standardisation (%)
Above 70	Extremely above average	2
60 - 70	Strongly above average	14
55 - 59	Above average zone	17
45 - 54	Average zone	34
40- 44	Below average zone	17
30- 39	Strongly below average	14
Below 30	Extremely below average	2

Table 1.  
Division of T – values of the TCI test according to zones (Cloninger et al 1994)

When evaluating the results we called the group with average scores the 'average zone'. The groups that achieved T – values of 60 – 70 and 30 – 39 we called 'strongly above average' and 'strongly below average' respectively. Scores that were in excess of these, either higher or lower, we called 'extremely above average' or 'extremely below average' (Cloninger et al 1994).

Based on the answers that the students gave (with questions on the frequency of their dental visits and their oral hygiene) regarding how they evaluate their own oral health we could clearly identify two distinct groups. They were given a choice of five possible answers to the question 'How do you judge the status of your teeth?' The choices were; very good, good, average, bad and very bad.

The two distinct groups are; *the group with 'good self – assessment' (Group 1), and the group with 'poor self – assessment' (Group 2). The students in Group 1* judged the status of their teeth as good even though their DMFT values were high (above nine). *The students in Group 2* judged the state of their teeth as bad or average although their DMFT values were also high (above nine).

We set up the categorisation of 'Group1 and Group2' according to the prescribed protocol of Vered and Sgan – Cohan (2003). We set the DMFT limit at nine by calculating the arithmetic mean value of the DMFT found by us and the DMFT measured in the test results.

### **3.4. Analysis of smoking and other healthcare habits in relation to oral health**

The validated questionnaires on the general state of health (Morgan et al 1999, Ewing 1984) of 792 students was completed by 696 students (87.9%), of which 617 were male and 71 were women. They were asked the following questions: Have you ever felt guilty about your alcohol consumption? Have you ever consumed alcohol early in the

morning to calm your nerves or to overcome a hangover? Do you smoke at present? If yes, what do you prefer to smoke? Approximately how much do you smoke daily? How often do you exercise because of your body weight or to stay in shape?

### 3.5. Statistical analysis

We carried out the statistical data processing with 'SPSS for Windows 10.0, 18.0' programme package using descriptive statistical methods (basic distribution, averages and deviations), ANOVA tests, Student's t-tests, Pearson correlation analysis and the 'Cronbach – alpha method, as well as crosstable analyses with 'khi – square' probes/tests and the Mann – Whitney test, Kolmogorov-Smirnov-test. The significancy level was  $p < 0.05$ .

## Results

### 4.1. Analyses of the etiological and risk factors of caries

#### *Social circumstances and family background*

Looking at the fathers' of the students involved in the study, 8.9% had primary school education, 81.1% had secondary education whereas 10% had graduated from college/university. When it came to family 8.5% of the students were only children, 81.7% had one or two siblings and 9.8% had three or more brothers or sisters. A father's education had an influence on the number of children in the family. In the case of students whose fathers had a college or university degree 12.5% of them had more than two siblings but this rose to 22.8% when the father only had primary school education. In the case of fathers who only had a primary school education, 3.5% of them only had one child while this went up to 9.4% when the father was a college/university graduate (students without siblings).

#### *Nutritional habits*



The majority of the students had three (36.1%) or four (35.9%) meals daily. When it came to sweets, 30.8% ate sweets every day and 28.8% drank sugared, carbonated soft drinks daily. We could not find any significant relationship between the fathers' education and the frequency of sweet consumption ( $p>0.05$ ). Sweet consumption decreased appreciably the more children there were in a family; 14.8% of students who had no siblings rarely ate sweets whilst 25.4% of students with more than two siblings seldom ate sweets ( $p<0.05$ ).

Taking into account the size of the community the students lived in, with regards to the consumption of sweets, we found a marked difference between students living in small towns or villages and those who lived in cities with a population of 500,000 or more. Of the students living in big cities, 5.9% admitted that they had never eaten sweets whilst this percentage dropped to zero amongst students living in small communities ( $p<0.05$ ).

#### *Oral hygiene habits*

Of the students we questioned 60% carried out oral hygiene activities twice a day. We found no significant differences between the frequency with which students cleaned their teeth and the size of the communities in which they lived ( $p>0.05$ ). However, the regularity with which students cleaned their teeth rose appreciably when their father had a higher level of education. Where fathers had only primary school education 5.3% of students cleaned their teeth less than once a day, whereas this fell to 1.6% when a student's father was a college or university graduate ( $p<0.05$ ).

When it came to carrying out oral hygiene 98.6% of students used a toothbrush and toothpaste, 10% used dental floss and 11.4% used mouthwash. The majority of students did not mention other devices to clean their teeth and 68.1% believed that their toothpaste contained fluoride.

In addition to compulsory screenings, 28.4% of students visited their dentist for a check-up, but the majority only went to their dentist when they had a dental complaint. However, 80.6% of them had visited their dentist in the previous 12 months. Of these students going for routine check-ups significantly more (85%) cleaned their teeth three times a day, but 64.7% did it once a day ( $p < 0.05$ ). The number of students that cleaned their teeth three times a day, and visited their dentist in addition to their compulsory screenings, was also considerably higher (57%) compared to 17% who only brushed their teeth once a day ( $p < 0.05$ ).

#### **4.2. Analysis of the relationship between caries prevalence and the etiological and risk factors of caries.**

The DTMF value in the population that we tested was  $10.19 \pm 5.79$  (mean  $\pm$  S.D.), (D:  $7.78 \pm 4.93$ ; M:  $1.51 \pm 1.57$ ; F:  $0.91 \pm 1.42$ ); 9.4% were caries free (D=0) and 40% had no missing teeth (M=0). The average male DMFT value of 10.3 was slightly higher than the average female DMFT value of 10.1 ( $p > 0.05$ ).

Statistically we found a significant relationship between the consumption of sugared, carbonated soft drinks and the DMFT values, and within this especially in the various DT values. Students who seldom drank soft drinks showed lower DMFT ( $9.82 \pm 5.46$ ) and DT values ( $7.51 \pm 4.68$ ) (mean  $\pm$  S.D) compared to those who drank them every day DMFT:  $11.58 \pm 6.01$  and a DT of  $8.81 \pm 5.20$  (mean  $\pm$  S.D) ( $p < 0.05$ ).

The students' fathers' education also considerably influenced the value of the F component; FT:  $0.85 \pm 1.96$  in the case of fathers with primary school education in comparison to  $1.28 \pm 1.62$  for those who had attended college or university ( $p < 0.05$ ). The students of university/college graduate fathers displayed an appreciably lower DMFT value in the tested population (DMFT:  $9.36 \pm 4.83$ ) than those whose fathers had a lower, primary school education (DMFT:  $11.16 \pm 5.61$ ).

We detected a statistically significant relationship between the DMFT, DT and FT values and the frequency of students' visits to their dentists ( $p < 0.05$ ). Students who visited their dentists in addition to their compulsory screenings showed significantly lower DMFT and DT values, but higher FT values, than those who only went to their dentist when they had a complaint. DMFT:  $8.31 \pm 4.50$  compared to  $11.07 \pm 6.06$ , DT  $5.73 \pm 3.91$  against  $8.7 \pm 5.16$ , FT:  $0.45 \pm 0.91$  to  $0.96 \pm 1.34$  ( $p < 0.05$ ).

The M value was considerably lower for students that used dental floss [MT:  $1.66 \pm 1.58$  (mean  $\pm$  S.D.)] than it was for students who did not use dental floss or any other additional device ( $1.28 \pm 1.63$ ) ( $p < 0.05$ ).

#### **4.3. Analysis of the relationship between the personality (temperament and character factors) and oral health.**

The T – value averages in those tested fell into the standard average zone, between 45 and 55, except for the T – values of self – directedness', which was slightly above the average [ $57.57 \pm 8.43$  (mean  $\pm$  S.D.)].

Of those tested, 57.5% judged the condition of their teeth to be 'good' or 'very good', 39.6% of them judged their teeth to be 'average' and 2.7% judged them to be 'bad'. The DMFT value of the students who judged their teeth to be 'good' was  $9.23 \pm 5.01$  (mean  $\pm$  S.D.) and within this they had a D value of  $6.93 \pm 4.26$ .

Based on the results of the TCI test, significant relationships emerged between the characteristics defined in the **temperament and characteristic dimensions** and the **DMFT values**; those who received extremely low 'novelty-seeking' scores during the TCI test had relatively high DMFT values [ $11.25 \pm 2.06$  (mean  $\pm$  S.D.)]. In the 'harm – avoidance' dimension for those students who received below average scores it was the DMFT value ( $10.75 \pm 5.79$ ) and the

D value  $8.75 \pm 4.9$ ) appreciably higher figures when compared to the D value average ( $7.78 \pm 4.93$ ) of the rest of the student group ( $p < 0.05$ ). The students with extremely high scores in the 'reward dependence' dimension had relatively low DMFT values ( $5.03 \pm 1.24$ ). In the case of students with extremely high or low scores in the 'self – directedness' dimension, we had relatively high DMFT values ( $10.95 \pm 4.60$ ), which were higher than the average DMFT of the entire tested population ( $10.58 \pm 5.80$ ) ( $p < 0.05$ ).

#### *Temperament and character*

##### *The 'poor self – assessment' group (Group 1).*

Here, notably more students belonged to the 'below – average' zone regarding the 'novelty – seeking' dimension (1.03%), compared with the rest of the students tested (0.6%) ( $p < 0.05$ ). When observing students in the 'harm – avoidance' dimension, we discovered that in the 'extremely above average' zone considerably fewer of them (Group 1) were represented (3.1%), in comparison with all the other students tested (6.3%), ( $p < 0.05$ ). In the 'reward dependency' dimension, the students who scored appreciably below average were also represented significantly less in number compared to the other students tested (4.4% to 7.5%) ( $p < 0.05$ ).

In addition, significantly less of these students belonged to the 'strongly below' average zone in accordance to their 'persistence' T values, when compared to the entire test group (3.1% to 6.3%) ( $p < 0.05$ ). Students with 'poor self-assessment' had notably higher presence in the 'strongly below average' group when we observed the 'self – directedness' dimension (3.8% compared to the entire test group's 2.8%) ( $p < 0.05$ ). In the 'cooperativeness' dimension significantly less students in Group 1 achieved 'strongly below average' scores during the TCI test (3.8%) compared to all the other students (6%) ( $p < 0.05$ ).

In the cooperativeness category, students with scores 'strongly below average' are less (10.6%) compared to the rest of the students (14.6%), but this difference can be considered to be insignificant ( $p>0.05$ ). With regard to the 'transcendancy' T values, considerably fewer students were in the 'strongly above average' zone (19%) from the 'poor self assessment' group than from the other students tested (3.8%) ( $p<0.05$ ).

*The 'good self – assessment' group (Group 2).*

The results of Group 2 revealed stressed differences from the average values among their fellow students in the 'novelty seeking', 'persistence' and 'harm avoidance' dimensions. There was a considerable difference between the students in this group and all other students in the 'novelty seeking' and 'persistence' dimensions with regard to the 'extremely low' scores. This also applied to the 'harm avoidance' dimension although here it was with the 'extremely high' scores zone where we found differences in the percentage figures [in Group 2 'novelty seeking' was 1.0% compared to 0.6% for the entire test group, 'persistence' was 3.4% for Group 2 compared to 6.8% for the rest and 'harm avoidance' was 3.4% for Group 2 compared with 1.7% for the others ( $p<0.05$ )]. In the 'reward dependency' and 'cooperativeness' dimensions Group 2 did not show any notable differences in comparison to the rest of the tested group ( $p>0.05$ ).

#### **4.4. Analysis of smoking and other healthcare habits in relation to oral health**

Of the students that took part in the tests 36.2% of them smoked.

The DMFT and D values of these students was significantly higher ( $10.83\pm 5.68$  and  $8.36\pm 4.68$  respectively), (mean $\pm$ S.D.) compared to that of the non-smoking students ( $10.06\pm 5.61$  and  $7.64\pm 4.48$  respectively)( $p<0.05$ ).

In percentage terms, amongst students who cleaned their teeth three times a day, there were more non-smokers (10.2%) than smokers (8.2%). This difference is not significant though ( $p>0.05$ ).

Of the students who smoke, 25% of them had already felt guilty about their alcohol consumption. This figure is notably lower amongst non-smokers where only 17.6% had felt guilty about their alcohol consumption ( $p<0.05$ ). Early in the morning 6.3% of smokers and 1.8% of non-smokers have drunk alcohol to overcome their hangover or to calm their nerves ( $p<0.05$ ).

Considerably less smokers did body exercises to stay in shape or to prevent weight gain compared to non-smokers.

The average DMFT values of the students that attended only one training session per month was considerably higher [ $12.43\pm 4.56$  (mean $\pm$ S.D.)] than that of their colleagues who attended training sessions once a week [ $8.67\pm 6.18$  (mean $\pm$ S.D.)] ( $p<0.05$ ).

However, notably less non-smokers drank sugared, sparkling soft drinks daily (23.4%) in comparison to the smokers (39.5%) ( $p<0.05$ ). The white lesions of oral mucosa showed a higher occurrence among smokers (1.2%) than it did among the non-smokers (0.2%) ( $p>0.05$ ). The rate of occurrence for this phenomenon rose considerably the higher the number of cigarettes that were smoked daily ( $p<0.05$ ).

## **5. Conclusions**

### **5.1. Analysis of the etiological and risk factors of caries**

The standard of education and the family background have an effect on the student's oral health and oral hygiene habits, as well as on the consumption of sweets.

The majority of the students in the test group only visit their dentist when they have a dental complaint.

The frequency of visits to the dentist reveals a strong correlation with oral health and oral hygiene habits; of the

students who visited their dentist in addition to their compulsory screening a higher proportion of them then pursued correct oral hygiene habits.

In our test group the size of the community where a student has their permanent address does not influence their behaviour with regard to visiting a dentist, nor does it effect their oral hygiene habits.

### **5.2. Analysis of the relationship between caries prevalence and the etiological and risk factors of caries**

With regards to the DMFT values; we did not find any significant divergences in our study compared to similar previous studies in Hungary concerning the same age group. However, some components do reveal some divergence; the DT value is higher whereas the FT is lower than for the same average age group in Hungary.

In our test group the consumption of sugared, sparkling soft drinks, and the frequency at which they consume sweets do not differ notably with the same age group in the general population of Hungary; although these consumption figures do show correlations with the prevalence of caries.

The use of dental floss, the frequency of visits to a dentist and the level of the fathers' education do show a correlation with the condition of a student's teeth.

### **5.3. Analysis of the relationship between personality (temperament and character factors) and oral health**

Among young people with 'good self-assessment' – having high caries prevalence – the phenomena that may higher occurrence are; passivity, low levels of self-assertiveness and introverted ness. Among students with 'poor self-assessment' and high caries prevalence, there is a higher percentage that can be characterised as having too much self confidence, have moody and changeable behaviour as well as being undisciplined than there is in the rest of our test group. These students can be motivated with bonuses or

rewards, they feel sympathy for others and have empathy but – based on their ‘transcendancy’ values – they have difficulty making friends or contacts. This is typical of people in the higher percentage range.

#### **5.4. Analysis of smoking and other healthcare habits in relation to oral health**

The cariological condition of smokers is less favourable than that of non-smokers.

Smokers are at a much higher risk of alcohol addiction than non-smokers are.

Non-smokers embrace a healthy lifestyle more readily than smokers do (the frequency of doing exercises and consuming less sugared, sparkling soft drinks).

Smokers pay less attention to their health, something that is also indicated by their higher caries prevalence.

The white lesions on the oral mucosa are more prevalent in smokers, and its occurrence is influenced by the number of cigarettes smoked.

#### **5.5 The basic elements of the Prevention Model for the test group based on this study**

##### **Aims:**

▶ to reduce caries prevalence (mainly by reducing the number of decayed or missing teeth)

▶ the prevention, or early diagnosis of lesions on the oral mucosa

▶ to identify patients at risk and to help facilitate the establishment of appropriate healthcare behaviour

▶ to know and learn more about ourselves, to promote health consciousness and to achieve a higher level of dental education than we have now

▶ to provide police students (as well as the police force in general) with a good overall state of health; bodily, mentally and psychically.

##### **Recommended steps.**



*For applicants*

► *compulsory health screening – including oral health – based on comparable examinations using forms and questionnaires approved by the WHO (objective basic examination); which will also assist in coming to a decision on the applicants suitability. Data received in this manner is easy to register, store and handle in an electronic data base (establishing a methodology centre).*

*For existing students*

► *to advise the students as to the condition of their oral health, any detected lesions and, with the help of an expert, of their importance. This can also be applied to unsuccessful applicants by providing the relevant information to their family doctor/dentist, who can then pass on the information during a visit to his or her surgery.*

► *individual expert advice based on relevant data, including; oral hygiene, nutrition and lifestyle. In the first instance this should be provided - where possible - by dentists, and then oral hygiene experts. This should be followed with help from other experts such as dieticians, career and job advisers, health workers, psychologists and psychiatrists. The most important elements in reducing the risk factors, based on our study, are:*

- *Reducing the consumption of sugared, carbonated soft drinks.*
- *The introduction of local preventive measures, to increase the frequency of cleaning the teeth, to use additional oral hygiene products (floss, mouthwash).*
- *To emphasise the importance of stopping smoking, the control of alcohol consumption and the importance of daily exercises (and/or providing the opportunities for exercise).*

► *carrying out psychological tests, that may help in identifying patients at risk from oral disease, and to detect psychological problems. These tests may also help, at a later date, to determine exactly which position these students undertake when they become police officers. From a mental-hygiene point of view, this may also be beneficial for their general state of health.*

1. *The regular completion of health tests are in accordance with basic examination procedures by means of 'summoning' the students to compulsory medical check-ups, and any absence, could be penalised. The data received should then be uploaded to the data base of the methodology centre where to be further analysed, from the point of view of dental education, their results and the efficiency of their health education can be*

*evaluated and the given oral conditions recorded. To carry out necessary methodical changes leaning on the experiences.*

2. *Based on the experience of the screenings, a special classification system is to be set up for police students; similar to that used by the Canadian Armed Forces where they employ 4 'classes' (Groves, 2008) according to the 'Dental Fitness Classification System' already introduced by NATO. If the students fail to live up to these regulations they can be suspended from their jobs.*
3. *The establishment of a nationwide prevention centre which would operate on unified objectives and principles. It could have a co-ordinating and evaluating role.*

***The provision of primary prevention at a level whereby the whole of society could greatly facilitate the objectives mentioned above, by:***

*Creating an appropriately regulated, efficient dental healthcare service supplying a network for children under the age of 6, children between the ages of 6 and 14, and finally for those aged between 14 and 18. This last group could be extended to cover students undergoing training of a secondary school level after they have completed their GCSE examinations. Special attention should also be paid to high risk patients.*

## **6. New scientific findings among law enforcement students**

The use of floss, the frequency of dental visits and the fathers' education reveal a relation/correlation to the prevalence of caries.

The size of the community of the students' permanent address neither influences their oral hygiene habits, nor the frequency of visits to the dentist.

Among the students who visit a dentist other than for the compulsory screenings, more of them have established proper oral hygiene habits.

A low DMFT value can be linked to strong 'reward dependency', susceptibility to emotional influence, openness and to human sympathy/compassion.

Based on correlations between a high DMFT value and temperamental factors, students can be characterised as having exaggerated self-confidence, stubbornness, being undisciplined and of having no goals in life.

Among youths with a high prevalence of caries, regardless of their self-evaluations, indications of extreme personality traits can be detected.

Smokers have higher DMFT and D values, in addition to a higher occurrence of white lesions in their oral mucosa than their non-smoking counterparts.

From the perspective of habits with an effect on the state of health-it can be stated that smokers do less physical exercise, consume a greater quantity of sugared, carbonated soft drinks and are more likely to develop an alcohol addiction than non-smokers are.

## **7. List of author's own publications**

### *7.1. Publications connected to this dissertation*

#### *7.1.1. Impact-factored studies in foreign languages*

**Faragó I**, Nagy G, Márton S, Túry F, Szabó E, Hopcraft M, Madléna M. (2012) Dental Caries Experience in Hungarian Police Student Population. *Caries Res*, 46:(2) 95-101. **IF: 2.514**

**Faragó I**, Túry F, Márton S, Nagy G, Hopcraft M, Madléna M. (2013) Links between oral health and personality at a law enforcement school. *Cent Eur J Med*, DOI: 10.2478/s11536-013-0251-9. **IF: 0.262**

#### *7.1.2. Studies in Hungarian without impact factors*

**Faragó I**, Márton S, Túry F, Bagi I, Madléna M. (2009) Dietary, oral hygiene habits, dental surgeon attendance, and social background in police student's population. *Fogorv Szle*, 102(1): 13-20

### *7.1.3. Quotable abstracts Acknowledgements*

**Faragó I,** Márton S, Túry F, Madléna M. (2009) Caries Experience and Related Factors in Hungarian Police Students.

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