Oral piercings among first-year university students

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Objective. The aim of the study was to examine oral piercings among first-year university students.

Study design. First-year university students in 2002 were invited to a dental examination (n = 234; 49 men and 185 women). Students with piercings formed the study group and the rest served as controls. The methods included decayed, missing, and filled teeth (DMF) index, stimulated salivary flow rates, panoramic tomograms, and questionnaires including the Depression Inventory of Beck. Fisher’s 2-sided exact test was used for statistical analysis.

Results. The prevalence of oral piercings was 3.4%. In the DMF indices, no statistically significant differences existed between the groups. Increased salivary flow rates were noted among students with piercings (63% vs 26%, P < .05). Use of tobacco and illicit drugs, and also depression, were more prevalent in the study group than in the controls.

Conclusion. Because of the possibility of oral implications, follow-up of oral piercings is essential.


In 1982, we started our first follow-up study on dental health of first-year university students at the University of Helsinki. At that time there were no oral piercings. In 2002, we started a new follow-up study with the exact same criteria for sample collection and we identified students with oral piercings. This finding was the impetus for the study.

Oral piercing has become popular among young adults during the recent decade. Since 1992, the literature has offered several articles about oral piercings, most of them being case reports. Oral jewelry is a relatively new phenomenon in the western world and therefore promptly reported. In the case reports, descriptions of complications appear, immediate as well as delayed ones. It is emphasized that oral professionals must be aware of piercings, inform the patients about consequences, treat possible complications, and recognize lesions caused by removed devices.

Only a few research projects on oral piercings exist. In a research article, 15 patients with tongue piercings seeking dental treatment were evaluated. The consequences registered were chipping of teeth, cracking of teeth, cusp fractures, dental abrasion, galvanic currents, dental infection, trauma to the lingual anterior gingiva, and salivary flow stimulating effect. Campbell et al compared the stem length of the tongue barbell and years of wear on gingival recession and tooth chipping. Their material consisted of 52 subjects with tongue piercings examined in nondental settings. They reported that lingual recession of gingiva was found after 2 years of wear and that the complications were significantly greater with a long-stem barbell. Damage to teeth was also more evident after 2 years of wear, but with a short barbell.

Because of the scarcity of research articles on oral piercings, the aim of this study was, first, to assess the occurrence and type of oral piercings among first-year university students. Second, the aim was to evaluate some implications in oral health as well as to analyze some background factors of these subjects compared to a control group.

MATERIAL AND METHODS

The study was carried out at the Finnish Student Health Service in Helsinki, Finland. This is a private institution for health care of university students all around in Finland. Almost all of the university students in Finland are native Finns and white. All first-year university students are every year invited to a routine dental examination at the Finnish Student Health Service. A sample of these students at the station of Helsinki was drawn for this study and was examined a little more completely than usual. All first-year
students aged 20 years, born in the capital, and living in the capital in 2002 were enrolled (n = 277). The number of participants was 234 (85% of those invited). Students with oral piercings formed the study group (n = 8) and the rest served as a control group (n = 226).

In the clinical examination, decayed, missing, and filled teeth (DMF index) and stimulated salivary flow rates were recorded. Salivary flow rates were recorded as increased (more than 3 mL/min), normal (1.0 to 3.0 mL/min), low (0.7 to 1.0 mL/min), or defective (less than 0.7 mL/min). Panoramic tomograms were taken of all students to aid in the diagnosis of DMF indices. Results of the oral examination and recommendations for treatment were sent to the students within a few weeks.

The study included an interview about the use of tobacco, alcohol, and illicit drugs. Use of tobacco was registered as yes or no. Use of alcohol was registered as not at all, weekly, or monthly. Use of illicit drugs was registered as not at all, tried 1 to 4 times, or used 5 times or more. The students were also asked to complete the long formula of the Beck Depression Inventory. Depression was recorded more often among students with oral piercings than in the control group (Table III).

Table 1. Distribution of the students according to DMF index (decayed, missing, and filled teeth) presented as number of students with percentages in parentheses

<table>
<thead>
<tr>
<th>DMF index</th>
<th>With piercing</th>
<th>Control group</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>3 (38)</td>
<td>40 (18)</td>
<td>.17</td>
</tr>
<tr>
<td>1-5</td>
<td>3 (38)</td>
<td>119 (53)</td>
<td>.19*</td>
</tr>
<tr>
<td>6-10</td>
<td>1 (12)</td>
<td>50 (22)</td>
<td>.33*</td>
</tr>
<tr>
<td>&gt;10</td>
<td>1 (12)</td>
<td>17 (7)</td>
<td>1.00*</td>
</tr>
</tbody>
</table>

*Compared to zero-group.

RESULTS

The number of students with oral piercings was 8 (3.4% of the sample). All of them were women. The control group consisted of 226 students (78% women and 22% men). The mean age of all the students was 20.6 years (SD ± 0.6 years).

Of the students not participating in the study, 28 students (10 men and 18 women) presented reasons such as no need of dental treatment, recent appointment with a family dentist, on a trip or abroad, in army, at job, or at a lesson. One third (15 students; 8 men and 7 women) did not present any reasons.

The 8 students had a total of 11 oral piercings: tongue barbell (7 cases), a ring near the left commissura of lower lip (1 case), labrette in the midline of the lower lip (2 cases), and a labrette in the lower lip in the region of left canine (1 case). The clinical appearance of the tissues surrounding the piercings was excellent in two thirds of the students. Three of the students (38% of the wearers) exhibited minor changes in soft or hard tissues: chipping of 4 premolars (3 on the right side and 1 on the left side), gingival recession of the labial side of lower central incisors, scar on the skin from the removed labrette in the midline of lower lip, and irritation of the skin around the ring in lower lip.

According to the DMF index, no statistically significant differences existed between the groups related to dental health (Table I). There was, however, a tendency toward a greater number of intact teeth in the study group compared to controls (38% vs 18%, respectively, P > .05). Increased salivary flow rates were found among students with oral piercings compared to controls (63% vs 26%, P = .04; Fig 1). In the rest of the salivary classes the differences were not statistically significant.

The students with an oral piercing smoked more often than the controls (75% vs 21%, P = .002; Table II). In the use of alcohol, no statistically significant differences existed between the study group and the controls (Table II). Use of illicit drugs was more common among the students with oral piercings than among the control group (26% vs 84%, P = .0005; Table II). The illicit drugs used were cannabis, ecstasy, and amphetamine. According to the Depression Inventory of Beck, depression was recorded more often among students with oral piercings than in the control group (Table III).

DISCUSSION

Oral piercing is a relatively new phenomenon. In a similar sample of Finnish first-year university students 20 years ago there were no oral piercings. In our present study the occurrence of oral piercings was 3.4%. In
earlier reports, figures for prevalence of oral piercings has not been presented. The prevalence of all body piercings and tattoos varies from 8% to 60%.\(^{18}\)

Compared to controls, oral piercings did not seem to have a measurable change on the DMF index (Table I). A severely fractured tooth may easily be removed with subsequent increase in DMF index. In our study, the number of students with oral piercings was so small and the time of wearing such a device had presumably been so short that no differences could thus far be detected. Years of wearing the device was not available in our study. Tooth damage is not observed in patients with a piercing with less than 2 years of wear.\(^{15}\)

This may be the first report of oral piercings with salivary flow rates measured and compared to a control material. In our study, increased flow rates were detected in 63% of students with oral piercings compared with 26% in the controls (Fig 1). Increased salivary flow rates have been reported earlier.\(^{4,8,14,19}\) In these reports, salivary flow rates were not measured, but were assessed visually or by questioning the subject. During the healing period of the first 2 weeks, excessive salivation was reported by a patient.\(^{4}\) Increased salivary flow was reported by 13% of the 15 subjects with a tongue barbell.\(^{14}\)

The overall clinical impression of all the 11 piercings was good. The consequences of wear in 3 students were only minor ones. The findings were the same as reported earlier, namely tooth chipping, gingival recession, and scar tissue. In addition, we noticed irritation of the skin by saliva flowing through the opening. Similar redness and light swelling around the opening may also be caused by contact allergy. When the ring around the lower lip swings around some saliva is spilled on the skin with subsequent irritation. Tooth chipping in our patient was more common on the right side of the jaw, as also reported earlier.\(^{15}\) Gingival recession was found in our study only on the labial side of lower incisors from a labrette, although in the literature similar recession is also found on the lingual side from the use of a tongue barbell.\(^{7,10,11}\) In the literature, scar formation from earlier piercings is reported related to tongue barbell\(^{6}\) and skewers passed through both cheeks.\(^{15}\) One of our patients had a minimal scar in the lower lip after the earlier removal of a labrette from the midline.

We think that the information of earlier reports about severe infections related to piercing have been very valuable. Nowadays, subjects wanting to have a piercing done are well-informed of the high level of requirements related to cleanliness and sterility. In Finland, Web sites are widely used for gathering information. In the Web sites (eg, www.madmaxtattoo.com) it is recommended that subjects not take any piercing while drunk and not during festivals, when the sterility requirements can not be fulfilled. Maybe the subjects with piercings are only missing some more information of the minor consequences of wear. At every appointment, when facing such a patient, oral professionals should examine the device and inform about probable consequences.

In our study, the use of tobacco and illicit drugs was more prevalent among students with piercings than among the controls (Table III). This finding may be related to the basic reasons to have an oral piercing. It may belong to the body image. The literature offers several reasons why individuals have an oral piercing: self expression, personal need, declaration of independence and individuality, a wish to fit into a group, and to enhance body image and sensuality.\(^{18,20,21}\) Additional reasons for piercings are that it is fashionable, a form of body art, a personal statement, or daring.\(^{14}\)

In addition, according to our results a significant proportion of the subjects with oral piercings had elevated scores in Beck’s Depression Inventory (Table III).\(^{16}\) We did not ask our subjects the reason for getting the piercing. However, having an oral piercing done may have some curing effect on the depression. According to the psychological perspective of piercing, a strong relation arises between piercings and personal

**Table II.** Distribution of the students related to smoking, use of alcohol, and illicit drugs. Figures are presented as numbers of students and percentages in parentheses

<table>
<thead>
<tr>
<th></th>
<th>With piercing</th>
<th>Control group</th>
<th>(P) value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>6 (75)</td>
<td>48 (21)</td>
<td>.002</td>
</tr>
<tr>
<td>No</td>
<td>2 (25)</td>
<td>178 (79)</td>
<td></td>
</tr>
<tr>
<td>Use of alcohol</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weekly</td>
<td>6 (75)</td>
<td>73 (32)</td>
<td>.3*</td>
</tr>
<tr>
<td>Monthly</td>
<td>2 (25)</td>
<td>125 (55)</td>
<td>1.00*</td>
</tr>
<tr>
<td>Not at all</td>
<td>0 (0)</td>
<td>28 (13)</td>
<td>.6</td>
</tr>
<tr>
<td>Use of illicit drugs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-4 times</td>
<td>3 (37)</td>
<td>27 (12)</td>
<td>.02*</td>
</tr>
<tr>
<td>&gt;5 times</td>
<td>3 (37)</td>
<td>9 (4)</td>
<td>.001*</td>
</tr>
<tr>
<td>Not at all</td>
<td>2 (26)</td>
<td>190 (84)</td>
<td>.0005</td>
</tr>
</tbody>
</table>

*Compared to non users.

**Table III.** Distribution of the results according to the Depression Inventory of Beck presented as number of students with percentages in parenthesis

<table>
<thead>
<tr>
<th></th>
<th>With piercing</th>
<th>Control group</th>
<th>(P) value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No depression (0-10)</td>
<td>5 (63)</td>
<td>207 (92)</td>
<td>.03</td>
</tr>
<tr>
<td>Mild depression (11-17)</td>
<td>3 (37)</td>
<td>14 (6)</td>
<td>.01*</td>
</tr>
<tr>
<td>Moderate depression (18-23)</td>
<td>0 (0)</td>
<td>5 (2)</td>
<td>1.00*</td>
</tr>
<tr>
<td>Severe depression (≥23)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td></td>
</tr>
</tbody>
</table>

*Compared to no-depression group.
events, especially if those events were traumatic.\textsuperscript{18} Body piercing can be understood as a process to aid in the construction of a coherent sense of self-identity.\textsuperscript{18} Although piercings are associated with complications in the initial phase as well as later, these implications are necessary side-effects that belong to the self-care process.\textsuperscript{18} In our study, the university students with piercings were a little more depressed and maybe desired to experiment more toward this fashion than the controls. The phenomena may also be related to the eagerness to become full-grown and to the striving for independence.

Because of the possibility of dental and oral implications, follow-up of oral piercings is essential.

REFERENCES


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