Awareness of complications of oral piercing in a group of adolescents and young South African adults

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Objectives. Intraoral piercing as a body art has been gaining popularity amongst adolescents and young adults; however there is limited data on the awareness to complications associated with it. This study investigated the awareness of complications of oral piercing among a group of adolescents and young South African adults with intraoral piercings.

Study design. A total of 250 patients with intraoral piercing were asked to complete a questionnaire on the awareness of complications of oral piercing and were then examined by two calibrated dentists to determine oral complications caused by the pierced ornament.

Results. Data revealed that 59.4% of the respondents were not aware of any complications in oral piercing. 24% of the respondents had intraoral piercing in the last 12 months, with a combined total of 17.2% having the procedure performed 5 to 7 years before.


Body piercing has been practiced by many tribal societies, particularly in Africa, Asia, and South America, as far back as can be traced.1,2 Recently the art of body piercing has attained popularity among teens and young adults in the Western world for a variety of reasons, such as to fulfil social demands, to make a personal statement, or to enhance sexual appeal.3 In other parts of the world, including South Africa, body and oral piercing may be part of cultural or religious beliefs.4 Common sites for body piercing are ear lobes, noses, eyebrows, navels, nipples, and the genitals. However, of special interest to the dental profession is piercing of the lips, cheeks, tongue, uvula, or a combination of these sites, with the tongue as the most commonly pierced site.5 For the present study, oral piercing was defined as any piercing that involves intraoral structures or has intraoral communication.

Oral piercing is usually done by unlicensed self-trained piercers who may not have sufficient clinical and anatomic knowledge.9 It may be performed without anesthesia and with inadequate infection control or postoperative care; thus, it is not surprising that a variety of complications associated with these procedures have been documented. Local complications that may manifest after oral piercing include hemorrhage, infection, edema, swelling, tenderness or pain, increased salivary flow, metal hypersensitivity, and trauma to the teeth resulting in fractures.7 Systemically, oral piercing has also been identified as a possible vector for the transmission of blood-borne viruses, such as human immunodeficiency virus, hepatitis (B, C, D, and G), herpes simplex, and the Epstein-Barr virus.8 Furthermore, oral piercing may lead to bacterial diseases, such as Neisseria-induced endocarditis,9 Streptococcus viridans endocarditis,10 and Ludwig angina.11

Although it would appear from the literature that most oral piercing proceeds uneventfully,12 the severity of the complications reported makes the practice of oral piercing one which cannot be condoned. Adding to the concern of possible complication of intraoral piercing is the level of awareness of these complications. Levin et al.13 reported a general lack of awareness of the complications of intraoral piercing (57.8%) in a group of young Israeli adults. The expression of this type of body art has become a dental concern over the past few years because of its increased frequency and detrimental effects on the health and function of patients. The management of the consequences of oral piercing, either direct or indirect, has become an integral function of modern dental practitioners. The objectives of the present study were to determine the awareness of the complications of oral piercing in a group of adolescents and young South African adults with intraoral piercing and to assess the types of complications.
MATERIALS AND METHODS

This study was carried out at the University of Limpopo, South Africa, and ethical clearance was granted by the Research and Ethical Committee of the University. Three hundred patients who attended the oral health clinics in the greater Tshwane metropolis (Gauteng) with intraoral piercing were selected initially for this study; however, only 250 adolescents and young adults in the age group of 13-34 years with current oral piercings were included in this study. Selection of the patients was dependent only on age and attendance to this regional oral health clinic and was not based on race, religious beliefs, education, but socioeconomic status.

All participants in this study received a consent form and a cover letter explaining the study, which included a noninvasive oral examination. Before oral examination, the patient’s age and gender were recorded and the patient was asked to complete a questionnaire as accurately as possible to collect data on type of piercing, time since piercing, and awareness of complications of oral piercing. Names were not being recorded on the questionnaire, to ensure anonymity. To avoid potential information bias, clarification was made to the participants that the study would not have any impact on the treatment they seek.

To avoid operator errors, 2 dentists were trained and calibrated to recognize complications of intraoral piercing. Intraoral examinations on all patients were done with the naked eye using an overhead operating light and a standard mouth mirror. Pierce-related pathology (i.e., tooth fractures, inflammation, infections, and chronic lesions) were recorded. The information obtained from the questionnaires was captured in an electronic database, which was verified and validated. Responses to the categoric questions were summarized by calculating the percentages of responses in the respective categories.

RESULTS

Data collected from the questionnaire revealed that the ages of the respondents varied between 16 and 35 years (mean age 19.6 ± 5.3 years), with a higher percentage being women (78%). The time frames for wearing the ornament showed that 23.4% of the respondents had a piercing within the past year and the rest between 1 and ≥7 years (Table I). Of the 250 patients who participated in this study, 59.4% were not aware of any complications in oral piercing, with greatest concern being fracture of tooth (19%), followed by gum problems and infections (Fig. 1, A). A large number of the respondents had experienced severe pain, swelling, or bleeding immediately and later after the piercing (Fig. 1, B). Examination of individual patients revealed

### Table 1. Time frames for wearing the ornament

<table>
<thead>
<tr>
<th>Time since piercing</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>&lt;1 y</td>
<td>23.4%</td>
</tr>
<tr>
<td>1 y</td>
<td>12.5%</td>
</tr>
<tr>
<td>2 y</td>
<td>18.8%</td>
</tr>
<tr>
<td>3 y</td>
<td>15.6%</td>
</tr>
<tr>
<td>4 y</td>
<td>12.5%</td>
</tr>
<tr>
<td>5 y</td>
<td>4.7%</td>
</tr>
<tr>
<td>6 y</td>
<td>4.7%</td>
</tr>
<tr>
<td>≥7 y</td>
<td>7.8%</td>
</tr>
</tbody>
</table>

Fig. 1. Complications of oral piercing: 
a large proportion the patients (59.4%) with some soft tissue changes or damage (Fig. 1, C).

**DISCUSSION**

Oral and perioral piercing, which were once thought of as part of religious, cultural, or sexual symbolism, has showed increased popularity among teens and young adults. Socioeconomic status or ethnic, social, or religious beliefs of the cohort could have affected reasons for piercing, but this was not looked into, because this study was limited to the awareness of possible complications of intraoral piercing regardless of the above-mentioned factors.

Patients that were questioned in this study were in general not well aware of all the complications that could be expected after oral piercing (Fig. 1, A), with awareness mainly restricted to the possibility of “tooth injury” and “gum problems.” The general lack of awareness of the various complications of oral piercing could be attributed to piercings being performed largely by nonmedical practitioners who are not aware of the possible complications of oral piercing or prefer not to tell the patients so as not to scare them off.

The present study showed a large number of respondents with recent (within the past 12 months) intraoral piercing among young adults and adolescents (23.4%). It is interesting to note that of the 250 respondents, only 4.7%-7.8% had any form of intraoral piercing that was ≥5 years old (Table I). These findings could be related to an increase in popularity of body art within this study group and is reflected in other studies.

Although a large number of patients complained of immediate postpiercing complications such as pain, swelling, and bleeding, only a few actually discontinued to use the ornament. The soft tissue damage linked to oral piercing that was found in this study can be summarized in 4 categories, namely: 1) scar tissue formation, 2) atrophy (depapillation) of the dorsum of the tongue, 3) laceration (split) in the lingual frenulum, and (4) loss of interdental papilla. Levin et al. reported that after piercing and in the absence of complications, healing occurs in 3-4 weeks. The present study, however, found that scar tissue formation accompanied the healing process in some of the cases. The scar tissue formation could be due to the piercing process itself (in the tongue) or as a result of secondary trauma due to the movement of the instrument.

The most common soft tissue change that was encountered in this study was atrophy (depapillation) of the dorsum of the tongue in the area surrounding the ornament. This could be due to chronic irritation of the ball of the instrument on the tongue dorsum. Loss of interdental papilla was also noticed when the bar bell rested on the interdental papilla, as is commonly observed in patients with the upper labial frenum pierced (Fig. 2, C and D).

In a few cases, a split was observed along the length of the lingual frenulum; this could have occurred when
the tongue was pierced; the shaft of the instrument penetrated through the lingual frenulum, and owing to constant movement a split was caused along the length of the frenulum. During the healing process, epithelium formation occurred, resulting in a permanent split of the lingual fraenulum.

Chipping (or fracture) of teeth related to tongue barbells was the most common dental hard tissue damage recorded in this study (34%). Damage to both posterior and anterior teeth was evident. A possible reason for the damage to teeth is that the beaded jewelry may become trapped between the teeth during mastication and/or intentional interposition (Fig. 2, A and B); this was more evident where longer barbells were used. Meltzer\textsuperscript{11} reported that switching to shorter barbells reduces damage to teeth; it was also clinically observed that the range of lengths of these barbells allows for a varying degree of mobility for the devices and therefore could contribute to the degree or severity of the observed complication.

CONCLUSION
The general lack of awareness of complications related to oral piercing needs to be addressed by the dental community. Education programs at high school may be a starting point; however, the treating dentist may also play an active role in examining and informing patients with oral piercing on the possible short- and long-term complications associated with this form of body art.

REFERENCES

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