

Dental jewellery and oral piercings: Knowledge, attitude and practice among dentists in Nairobi

Sumbi IM¹, Edalia L², Mua B³

1. School of Dental Sciences, University of Nairobi
2. Department of Conservative and Prosthetic Dentistry,
School of Dental Sciences, University of Nairobi
3. Department of Periodontology, Community and Preventive Dentistry,
School of Dental Sciences, University of Nairobi

Corresponding author: Dr Laura Edalia, lauramwirigi@gmail.com

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Abstract

Background: Dental jewellery and oral piercings are new trends gaining popularity across the world. They include the use of twinklers, gems, dazzlers among others which are placed directly on the tooth surface. Piercing of oral soft tissues is also a new trend that is used to facilitate placement of jewellery. It is therefore important for dental practitioners to have sufficient knowledge on dental jewellery, oral piercings and the complications associated with them.

Objectives: To assess the knowledge, attitude and practice of dental jewellery and oral piercings among dentists in Nairobi.

Study design: This was a descriptive cross-sectional study.

Materials and methods: The study population consisted of dentists practicing in public and private institutions within Nairobi. Purposive sampling was done whereby all dentists engaged in clinical practice within Nairobi were eligible for the study upon giving informed consent. A self-administered questionnaire was given to dentists at their work places in either hard or soft copy form. Data analysis was done using MS Excel and SPSS (v21. IBM) software and results were presented in the form of tables and charts.

Results: A total of 76 respondents participated in the study. Most dental practitioners in this study were familiar with metallic crowns (98.7%), followed by soft tissue piercings (96.1%) and tooth gems and twinklers (85.5%). The least known piece of dental jewellery was tooth rings (26.3%).

Metallic crowns were the most commonly placed ornaments having been placed by 41(53.9%) dentists while tooth rings and soft tissue piercings were the least common, each having been performed by only one dentist. Many dental practitioners reported that they hadn't managed complications involving these ornaments. Most of the ornaments were considered unesthetic by many dentists with only dental tattoos and tooth gems/twinklers considered esthetic by a good number of dentists, 39(51.3%).

Conclusion: This study reflected that there was sufficient knowledge on dental jewellery and oral piercings among dentists practicing in Nairobi. However, most dental practitioners hadn't placed or managed complications associated with these ornaments.

Introduction

There has been an increase in the importance of self-image and appearance in the 21st century. This has resulted in a more self-conscious society with individuals seeking to be unique among their peers.¹ People are looking for various treatments like body art and cosmetic dental treatments to enhance the appearance of their smiles and make a fashion statement. Body art includes tattooing, body piercings and oral soft tissue piercings.^{1, 2}

The use of tooth jewelry has been documented in Native Americans as far back as 2500 years ago.³ This group of people improved the look of their teeth by carving notches and grooves and placing semi-precious stones in them. The Mayans were also accomplished smelters and forgers of gold, silver and bronze. They would fabricate and place stone inlays into prepared cavities in their front teeth.³ This demonstrates that tooth jewellery isn't a new concept, however it has become more popular in the recent times as a type of expression of individualism especially among individuals aged between 18 and 35 years old. The rise in popularity has been fuelled by celebrities such as hip hop artists and disc jockeys who don this jewellery to make their performances more extravagant.

Another form of body art that is rising in popularity is oral and perioral piercings. Piercing in the oral cavity has gained rapid interest this century, especially in the western world. Historically the Summa tribe of Ethiopia wore large plates on their lower lips.⁴ Similarly, married men of the Suya tribe of Brazil wore painted wood disks on their lower lips. These days there are a variety of oral piercings. The most popular being tongue piercings.⁵ Other examples are cheek, frenum, uvula and lip piercings.

There is a level of risk of infection and pain with all body piercings. Documented infections transmitted during and after oral and perioral piercings include HIV, Hepatitis, tetanus among others.^{6,7,8,9,10,11} In some cases there is a risk of developing fatal infections like Ludwig's Angina or Endocarditis from the open wound of the piercing.

Complications may also arise from teeth jewellery; if the jewellery type used is too small the ring placed could cut off blood supply to the surrounding soft tissue causing pain and swelling. On the other hand, if the ring used is too large or heavy it could tear the flesh off.¹² The presence of a ring in the oral cavity stimulates excess saliva production and this could result in prolonged drooling.

Tongue piercings could cause swelling, inflammation and reduced taste sensation. There have been reported cases of gingival recession and loss of alveolar bone in the anterior mandibular region with piercings done in that area. More serious complications like nerve damage have also been reported, there is an increased possibility of this in dorsolateral piercings of the tongue due to the proximity to the trigeminal, facial, hypoglossal and glossopharyngeal nerves.¹³

Tooth jewellery can sometimes cause ulceration of the lips when lip function is interfered with. The ball of the laberette or lip barbell rubbing against the mandibular anterior teeth have been shown to cause dehiscence of the facial gingiva in that area.^{1, 13,14} Other complications associated with dental jewellery include metal hypersensitivity, which presents as an allergic reaction affecting soft tissue.^{15, 16} Other common complications associated with oral piercings include difficulty in speech, swallowing or chewing, excessive bleeding of the wound and localized tissue overgrowth. Localized tissue overgrowth increases the risk of keloid tissue formation.¹³

A common dental hard tissue complication is cracked tooth syndrome. There can be chronic injury to adjacent teeth eventually resulting in tooth fracture. At times movable jewellery can cause abrasion of teeth. Fixed grills are very difficult to clean; therefore, plaque is more likely to accumulate underneath them. For individuals who desire grills, the removable type should be recommended and good oral hygiene practices encouraged.¹² Patients with high caries risk should be advised against some tooth jewellery that requires tooth preparation that will result in permanent defects on the teeth as those areas will be even more prone to dental caries as a result of plaque accumulation.

Due to the rise in demand for dental jewellery and oral soft tissue piercings it is important for oral health care providers to be aware of the various types of dental jewellery available, procedures involved, the relevant complications and their management. In light of paucity of published data regarding this subject matter in Kenya, the objective of this study was to establish the knowledge, attitude and practice of dental jewellery and oral piercings among dentists in Nairobi.

Materials and Methods

This was a descriptive cross-sectional study. The study area was Nairobi which is the capital city of Kenya. The study population consisted of dentists engaging in clinical practice in private dental clinics and public dental hospitals within Nairobi. Nairobi was selected for the study as it hosts the highest number of dentists by virtue of being the capital city. Purposive sampling was used. All dentists involved in clinical practice within Nairobi were eligible for the study upon satisfying the

consenting procedures. The research study was approved by the Kenyatta National Hospital/ University of Nairobi ethics and research committee. A written informed consent was sought from all the subjects prior to participation in the study. Confidentiality of all information was guaranteed. Subjects were free to decline from participating in the study and to withdraw participation at any given time without any dire consequences.

A self-administered questionnaire was used to collect data on knowledge, attitude and practice regarding dental jewellery and oral piercings. Questionnaires were distributed in both hard and soft copy. The link to the online questionnaire was distributed widely. A total of 80 hard copy questionnaires were distributed in the study. Fifty four hard copy questionnaires were returned. The soft copy questionnaire was distributed widely, and a total of 22 responses were received. Hence a total of 76 dentists responded to the questionnaire. Data analysis was done using MS-Excel and SPSS (v21, IBM).

Results

A total of 76 dentists participated in the study. There were 39(51.3%) male participants and 33(43.4%) female participants. Four (5.3%) participants didn't respond to the question on gender. A total of 68 (89.4%) respondents had trained in Kenya, 3(3.9%) were trained in other African countries, while 2(2.6%) trained in India. Three participants (3.9%) did not answer this question. The age of participants ranged from 26 years to 59 years with a mean of 34.8 (+/-8.122SD) years. The number of years of clinical practice of the participants ranged from 2 to 33 years with a mean of 10.06 (+/- 7.692) years.

Thirty five participants (46.1%), were engaged in both private and public practice, 31 (40.8 %) were drawn from the private sector while 7 (9.2%) were from the public sector. Three respondents (3.9%) did not respond to this question.

Most of the Dental practitioners were aware of metallic crowns (98.7%) followed by soft tissue piercings (96.1%) and tooth gems and twinklers (85.5%). The least known piece of dental jewellery was tooth rings (26.3%). [Table 1]

Table 1: Awareness of dental jewellery and oral piercings among dentists

	Yes n (%)	No n (%)	Didn't respond n (%)
Tooth gems and twinklers	65 (85.5%)	10 (13.2%)	1 (1.3%)
Dental tattoos	34 (44.7%)	39 (51.4%)	3 (3.9%)
Tooth rings	20 (26.3%)	54 (71.1%)	2 (2.6%)
Dental grills	58 (76.3%)	14 (18.4%)	4 (5.3%)
Metallic crowns	75 (98.7%)	0	1 (1.3%)
Soft tissue piercings	73 (96.1%)	1 (1.3%)	2 (2.6%)

Dental grills, dental tattoos and tooth rings were perceived to take a long time to fabricate and place as reported by 66 (86.9%), 65 (85.5%) and 62 (81.6%) of the dentists respectively. As for metallic crowns, soft tissue piercings and tooth gem/twinklers, only 42 (55.3%), 39 (51.3%) and 38 (50%) dentists respectively reported that these procedures took long.

The procedure thought to be harmful by most dentists, 69 (90.8%) was fabrication of dental tattoos whereas metallic crowns were considered harmful by the least number of dentists, 23(30.3%).

Most respondents thought that soft tissue piercings (72.4%), tooth rings (71.1%) and dental tattoos (71.7%) required surgery while majority (86.9%) reported that metallic crowns didn't require surgery.

Dental practitioners were mostly aware of complications involving soft tissue piercings 61(80.3%) and metallic crowns 58(76.3%) and were least aware of complications involving tooth rings 42 (55.3%). [Table 2]

Table 2: Awareness among dentists on complications associated with dental jewellery and soft tissue piercings

	Yes n (%)	No n (%)	Missing Responses n (%)
Tooth gems and twinklers	44(59.2%)	1(1.3%)	30(39.5%)
Dental tattoos	49(64.5%)	26(34.2%)	1(1.3%)
Tooth rings	42(55.3%)	33(43.4%)	1(1.3%)
Dental grills	48(63.2%)	27(35.5%)	1(1.3%)
Metallic crowns	58(76.3%)	17(22.4%)	1(1.3%)
Soft tissue piercings	61(80.3%)	14(18.4%)	1(1.3%)

Slightly more than half of the dental practitioners were of the opinion that tooth rings 39(51.3%) and tooth gems/twinklers 39(51.3%) were aesthetic whereas many of them felt that metallic crowns 53(69.7%) and soft tissue piercings 47(61.8%) were not esthetic. (Table 3)

Table 3: Perception of esthetic value of dental jewellery and oral piercings among dentists

	Yes n (%)	No n (%)	Missing Responses n (%)
Tooth gems and twinklers	39(51.3%)	36(47.4%)	1(1.3%)
Dental tattoos	34(44.8%)	41(53.9%)	1(1.3%)
Tooth rings	39(51.3%)	36(47.4%)	1(1.3%)
Dental grills	23(30.3%)	52(68.4%)	1(1.3%)
Metallic crowns	22(29%)	53(69.7%)	1(1.3%)
Soft tissue piercings	28(36.9%)	47(61.8%)	1(1.3%)

The procedure which had been performed the most by dentists who were interviewed was placement of metallic crowns, this had been done by 41 (53.9%) dentists, whereas placement of tooth rings and soft tissue piercings were the least performed procedures with only one dentist(1.3%) reported having performed either procedure. (Table 4)

Table 4: Performance of procedures related to dental jewellery and soft tissue piercings by dentists

	Yes n (%)	No n (%)	Missing Responses n (%)
Tooth gems and twinklers	11(14.5%)	64(84.2%)	1(1.3%)
Dental tattoos	6(7.9%)	69(90.8%)	1(1.3%)
Tooth rings	1(1.3%)	74(97.4%)	1(1.3%)
Dental grills	8(10.5%)	67(88.2%)	1(1.3%)
Metallic crowns	41(53.9%)	34(44.7%)	1(1.3%)
Soft tissue piercings	1(1.3%)	74(97.4%)	1(1.3%)

A good number of dentists reported that they had managed complications involving metallic crowns 31(40.8%) and soft tissue piercings 22(28.9%). Very few dentists reported having managed complications associated with the other forms of dental jewellery. (Table 5).

Table 5: Management of complications associated with dental jewellery and soft tissue piercings by dentists

	Yes n (%)	No n (%)	Missing Responses n (%)
Tooth gems and twinklers	13(17.1%)	62(81.6%)	1(1.3%)
Dental tattoos	11(14.5%)	64(84.2%)	1(1.3%)
Tooth rings	14(18.4%)	61(80.3%)	1(1.3%)
Dental grills	12(15.8%)	63(82.9%)	1(1.3%)
Metallic crowns	31(40.8%)	44(57.9%)	1(1.3%)
Soft tissue piercings	22(28.9%)	53(69.7%)	1(1.3%)

Metallic crowns had received most inquiries with 67(88.2%) of the dentists reporting their patients had inquired about them, while tooth rings had received the least inquiries with only 13(17.1%) of the dentists having received inquiries about them.

(Table 6)

Table 6: Inquiries from patients regarding dental jewellery and soft tissue piercings

	Yes n (%)	No n (%)	Missing Responses n (%)
Tooth gems and twinklers	48(63.2%)	27(35.5%)	1(1.3%)
Dental tattoos	22(28.9%)	53(69.7%)	1(1.3%)
Tooth rings	13(17.1%)	62(81.6%)	1(1.3%)
Dental grills	38(50%)	37(48.7%)	1(1.3%)
Metallic crowns	67(88.2%)	8(10.5%)	1(1.3%)
Soft tissue piercings	36(47.4%)	39(51.3%)	1(1.3%)

The most frequently encountered complication involving soft tissue piercings was pain 30(39.5%), followed by swelling 29(38.2%). The complication least frequently encountered was aspiration of the piercing 1(1.3%). [Table 7]

Table 7: Complications encountered by dentists involving soft tissue piercings

	Yes n (%)	No n (%)	Missing Responses n (%)
Pain	30(39.5%)	44(57.9%)	2(2.6%)
Swelling	29(38.2%)	44(57.9%)	3(3.9%)
Prolonged bleeding	11(14.5%)	62(81.6%)	3(3.9%)
Prolonged drooling	11(14.5%)	62(81.6%)	3(3.9%)
Keloids	18(23.7%)	55(72.4%)	3(3.9%)
Metal hypersensitivity	18(23.7%)	56(73.7%)	2(2.6%)
Gingival recession	19(25%)	54(71.1%)	3(3.9%)
Dehiscence	8(10.5%)	65(85.5%)	3(3.9%)
Reduced taste sensation	6(7.9%)	67(88.2%)	3(3.9%)
Nerve damage	8(10.5%)	65(85.5%)	3(3.9%)
Infection	34(44.7%)	40(52.6%)	3(3.9%)
Tearing off flesh with heavy rings	16(21.1%)	56(73.7%)	4(5.3%)
Masticatory impairment	17(22.4%)	56(73.7%)	3(3.9%)
Speech impairment	24(31.6%)	48(63.2%)	4(5.3%)
Aspiration	1(1.3%)	72(94.7%)	3(3.9%)

The most common complication associated with dental jewellery that had been encountered was increased caries risk 28(36.8%), whereas metal hypersensitivity had been least encountered 11(14.5%). [Table 8]

Table 8: Complications encountered by dentists associated with dental jewellery

	Yes n (%)	No n (%)	Missing Responses n (%)
Increased carries risk	28(36.8%)	46(60.5%)	4(5.3%)
Metal hypersensitivity	11(14.5%)	62(81.6%)	3(3.9%)
Tooth discoloration	25(32.9%)	48(63.2%)	3(3.9%)
Fractured tooth	19(25%)	54(71.1%)	3(3.9%)
Cracked tooth syndrome	17(22.4%)	56(73.7%)	3(3.9%)
Gingival recession	23(30.3%)	50(65.8%)	3(3.9%)

Discussion

Documented literature suggests there is an increase in demand for body art in various areas of the world like the United States, Brazil and India.¹⁷ Despite the fact that there is very little documentation of this trend in Kenya, it is important for the dental professionals to be aware of the shifting trends and thus update their skills in the safe provision of dental jewellery and oral piercing in order to satisfy the aesthetic needs of their clients.

Dental practitioners in this study were mostly aware of metallic crowns (98.7%) followed by soft tissue piercings (96.1%) and tooth gems and twinklers (85.5%). The least known piece of dental jewellery were dental tattoos (44.7%) and tooth rings (26.3%). The deficiency in knowledge of dental tattoos and tooth rings may be attributed to the fact that they are relatively uncommon in Nairobi and Kenya as a whole. This may be because Kenya has a more conservative perspective towards aesthetics and fashion trends. The limited knowledge regarding dental tattoos was further depicted by the fact that participants thought that doing dental tattoos was harmful, which is not the case.

In regard to practices involving dental jewellery and oral piercings, it was reflected in the results that many dental practitioners hadn't performed these procedures or managed complications involving these ornaments. Placement of metallic crowns was the most commonly undertaken procedure with 41(53.9%) dentists reporting that they had done this procedure. Other procedures such as placement of tooth rings and performance of soft tissue piercings had only been done by 1(1.3%)

dentist. This may be attributed to the fact that these ornaments are not very popular in the population. The attitudes of the dentists towards dental jewellery and soft tissue piercings may also be a contributing factor as most reported that they did not consider these ornaments esthetic. Only tooth gem/twinklers and dental tattoos were considered esthetic by at least half of the dentists interviewed. This is in contrast to a study done in Tricity, India by Bhati et al,² whereby 224 (72.3%) dentists reported practicing application of tooth jewellery in their clinics and 263 (84.8%) of the dentists believed that it was useful for enhancing esthetics.

Most dentists had not managed complications involving dental tattoos (84.2%) and dental grills (82.9%), however a good number reported they had managed complications involving metallic crowns (40.8%). This is probably due to the fact that metallic crowns were more popular among the patients served by the study population as evidenced by the number of doctors who reported having performed or received inquiries regarding them.

In as much as the awareness and practice regarding dental jewellery and soft tissue piercings was low among dentists interviewed it was evident that these procedures are gaining popularity among the Kenyan population as depicted by the number of dentists who reported having received inquiries regarding them. Metallic crowns, tooth gem/twinklers and dental grills had received the most inquiries as reported by 88.2%, 63.2% and 50% of the dentists respectively.

Conclusion

This study reflected that there was deficient knowledge on dental jewellery and oral piercings among dentists practicing in Nairobi, it also reflected that most dental

practitioners hadn't placed or managed complications involving these ornaments. Most of the dental ornaments were considered unesthetic by the dentists.

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