

# Tooth Jewellery- Its Knowledge and Practice Among Dentists in Tricity, India

SONAL BHATIA<sup>1</sup>, VIKRAM ARORA<sup>2</sup>, NIDHI GUPTA<sup>3</sup>, PREETY GUPTA<sup>4</sup>, MOHIT BANSAL<sup>5</sup>, SAHIL THAKAR<sup>6</sup>

## ABSTRACT

**Introduction:** The world of fashion is ever changing and this dynamics applies to dentistry. As dentistry and dental treatments have become necessary facet of a healthy life and therefore down the line fashion prospect of tooth jewellery are also getting fused into it.

**Aim:** To assess the knowledge and practice of tooth jewellery among practicing dentists of Tricity, India.

**Materials and Methods:** A descriptive, cross-sectional study was conducted among 310 dental practitioners in Tricity (Chandigarh, Mohali and Panchkula), India. A self-administered, close-ended questionnaire was distributed among all the dental practitioners in order to assess their knowledge and practice regarding tooth jewellery. Responses of the questionnaire was obtained on the dichotomous scale with Yes and No. Right answers were given a score of 2 whereas the wrong answers were given as score of 1. The data was analyzed using unpaired students t-test, one way ANOVA (analysis of variance) and multivariate logistic regression.

**Results:** A significant difference was observed among the genders with males being three times more knowledgeable (OR=3.5, 95%CI: 0.8-2.8). It has been found that knowledge and practice scores of dental practitioners who spend more than 10 hours per day have two times more knowledge (OR= 2.3, 95%CI:0.08-1.1) than others. The dentists holding the masters degree were having three times more knowledge than the graduates' ones (OR= 2.3, 95%CI:0.1-1.9).

**Conclusion:** The present study concluded that dental practitioners had sufficient knowledge about tooth jewellery. Practice of tooth jewellery in the dental clinics was found to be adequate but it was also associated with some complications. To overcome this, it is advised that professional and government bodies should create strategies for enhancing and improving people's knowledge as well as make them aware of the pros and cons while using tooth jewellery which shall further enhance their smile.

**Keywords:** Aesthetics, Dental practitioners, Fashion, Tooth gems

## INTRODUCTION

Aesthetics has become an important aspect of dentistry over the past few years and has led to the development of new materials and techniques [1]. Everybody wishes to create their own visual style which makes them unique and yet identifiable among the crowd. Body decoration has also gained influence with the wearing of jewellery at unconventional sites is being referred to as body art. In the developed world, the expression of individualism through such kind of body art like tooth jewellery has become most popular. Specially, younger generations follow their self made rules for looking fashionable and it applies to dentistry as well [2]. Adolescence is a period of tremendous transformation in the appearance of body and the evolution of adult's mind. The child's transformation to a teenager becomes a means of communication and a language to express self individualism. Body art is one such way of self expression. Therefore, being the latest trend, tooth jewellery becomes an indication in increasing the standard of living of the individual in the society [3].

A case report given by Vazhiyodan A et al., in the year 2013 describes that tooth jewellery is not a new concept as native Americans also added bling to their teeth as far back as 2500 years ago [4]. According to a recent study, that examined thousands of teeth from collection in Mexico's National Institute of Anthropology and History showed that the Skyce and Sapphire are the high quality tooth jewels that were most commonly used by practicing dentists across the globe.

Tooth jewellery, a cosmetic dental procedure where a diamond or a stone is attached to the teeth is gaining utmost importance with increasing awareness among people [4].

Tooth Gems and Dazzlers are the different types of tooth jewel available in the market [5]. Tooth Gems include Skyce and Sapphire crystals, both are high quality tooth jewels, but Skyce put an extra sparkle into every smile with its clear crystals whereas Sapphire possesses white or blue crystals. Dazzlers are the tooth jewels which are specially designed to be bonded to the tooth with its patented backside like an orthodontic bracket which makes them lasts longer. Twinkles are pure gold with precious stones like diamond, sapphires and rubies [6]. Dental crystals are glass mounted on a thin foil of aluminium to establish an attractive smile although the bonding here is not as durable as in tooth gems, but can easily last for six months. A variety of shapes are available in the market like diamond, star, triangle, droplet, heart and round shape.

People belonging to all age groups are being attracted to this kind of body art but most commonly, it is worn by 18-35 year old hip-hop artists and disc jockeys in order to add on to the extravagance of their performance and to get an extra spark to their smile while interacting with the audience [7].

Moreover, tooth sensitivity, plaque accumulation, aspiration, allergy, or chronic injury to the adjacent teeth/ mucosa, including tooth fracture and gum recession are few complications associated with tooth jewellery which sometimes can lead to tooth loss in an individual [7]. However, if proper oral hygiene has been maintained by the individual, these complications can be minimised and the tooth jewel shall remain on the tooth for a longer duration [8].

There is a scarcity of data regarding the knowledge and practice of tooth jewellery among dentists and to the best of our knowledge, no studies associated with tooth jewellery were found. Therefore,

this study was conducted to assess the knowledge and practice regarding tooth jewellery among dental practitioners of Tricity, India.

## MATERIALS AND METHODS

**Study design and population:** A descriptive, cross-sectional study was conducted among 310 dental practitioners in Tricity (Chandigarh, Mohali and Panchkula), India in the month of August and September 2015. The protocol of the study was approved by the Ethical and Review Board of Swami Devi Dyal Hospital and Dental College, Panchkula district, Haryana, India. The study has been conducted in full accordance with the World Medical Association Declaration of Helsinki.

The sample size was calculated based on the assumption that 75% of the dentist's may have sufficient knowledge on tooth jewellery. Precision was set at 5%. For p value 0.05% and 80% power of the study, our expected sample size was 300 dentists. Therefore, a convenient sample of 310 dentists was recruited for the study.

List of all dental practitioners was obtained from the respective state Dental Council branches. From the list, a total of 310 subjects were randomly approached to participate in the study with approximately equal number of dentists from each city, 104 were from Panchkula, 108 were from Chandigarh and 98 were from Mohali participated in the study i.e. probability proportional sampling. Written informed consent was obtained from all the study subjects after explaining them the aim and objectives of the study.

A self structured, close ended questionnaire was designed to obtain dentists knowledge and practice regarding tooth jewellery and was distributed among all the subjects which took approximately five minutes to complete. The questionnaire was pretested, revised and retested before use. Prior to the study, a pilot study was performed on 30 dental practitioners in order to determine test-retest reliability of the survey questionnaire. Feedback on the clarity of the questionnaire was obtained from the respondents and was asked about any difficulty or ambiguity in answering the questionnaire so as to what sort of answer was required. Few modifications were made based on the response given by the study subjects to improve the understanding of the questionnaire.

The participants of the pilot study were not included in the final analysis. Cronbach's alpha of the questionnaire was found to be acceptable (0.82). Content validity was obtained based on the opinions expressed by a panel of five academicians. Face validity was also assessed and it was observed that most of the participants found the questionnaire to be easy.

The final questionnaire consisted of three sections in which Section A comprised of demographic profile of the study subjects. Section B comprised of six questions to collect information about knowledge regarding tooth jewellery. Section C composed of six questions which aimed to assess the practice of tooth jewellery in their dental clinics. Questions included in the questionnaire were regarding its procedure, whether it is harmful, painful, surgical or not, and what is the main reason behind the craze of tooth jewellery among different people. Questions also included whether they are practicing tooth jewellery in their clinics, if yes then do they find it safe for more people who adopt this procedure and if no, then will they start practicing tooth jewellery in their clinics in future or not.

The participant's responses for Section B and C were recorded dichotomously and given as "Yes" and "No". Right answers were given a score of 2 whereas the participant's giving wrong answers were given as score of 1, the mean score for knowledge scores were calculated and a cutoff point was set based on the mean scores. Based on the cut-off point, the value above the mean

indicates higher knowledge and the value below the mean indicates low knowledge. Similarly, values above the mean depicted high practice and the values below the mean indicated low practice regarding tooth jewellery.

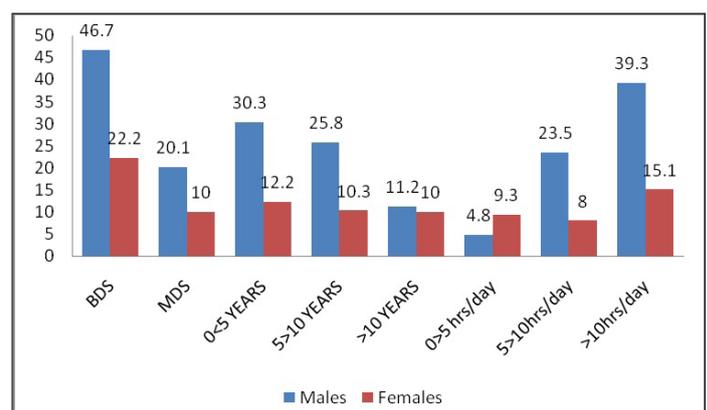
## STATISTICAL ANALYSIS

The results were expressed in percentages. Mean knowledge and practice scores were calculated as low and high scores among different study variables. Statistical tests used were unpaired students t-test (unpaired), one way ANOVA. Multivariate logistic regression analysis was carried out to assess the association of participant's demographic and professional characteristics with knowledge and practice scores. All statistical tests were two-tailed and p value of less than 0.05 was considered to be statistically significant. We consider the null hypothesis that the dentists practicing in Tricity have insufficient knowledge regarding tooth jewellery. The data was analyzed using Statistical Package for Social Sciences (SPSS), software version 16.0; Inc., Chicago, IL, USA.

## RESULTS

The present study was conducted among 310 dental practitioners with male predominance of 209 (67.5%). Majority of the subjects 214 (69%) were having bachelors degree. Most dentists 168 (54.1%) spend more than 10 hours/ day in their clinical practice [Table/Fig-1].

[Table/Fig-2] describes the responses of the questionnaire given by the study subjects with the most of the dentists 213 (68.7%)



[Table/Fig-1]: Demographic details of the study subjects (n %).

Questions	Responses to the questions	
	YES	NO
Are you aware of its procedure?	213(68.7)	97(31.3)
Do you think it's harmful?	119(38.3)	191(61.7)
Do you think it's expensive procedure?	89(28.7)	221(71.3)
Do you think day by day people are getting interested in tooth jewellery?	250(80.6)	60(19.4)
Is this procedure painful?	59(19.1)	251(80.9)
Is this procedure involves any kind of surgery?	35(11.3)	275(88.7)
Are you practicing for application of tooth jewellery in your clinic?	224(72.3)	86(27.7)
Do you think its useful for enhancing aesthetics?	263(84.8)	47(15.2)
According to you latest trend could be the reason behind its popularity?	253(81.6)	57(18.4)
Is this procedure takes long time to complete?	38(12.2)	272(87.8)
Is this procedure really helpful in giving extra spark to the smile without damaging the teeth?	213(68.7)	97(31.3)
Do you think everyone should adopt this procedure?	200(64.5)	110(35.5)

[Table/Fig-2]: Questionnaire regarding knowledge of tooth jewellery and the responses given by the study subjects. Figures in parenthesis are in %

Knowledge scores			
	N	Mean±S.D	Tests applied
<b>Gender</b>			
Males	209	14.3±1.2	df=308, t=2.3, p=0.00
Females	101	13.9±1.1	
<b>Qualification</b>			
BDS	214	13.9±1.1	df=308, t=-6.7, p=0.00
MDS	96	14.8±1.0	
<b>Age groups</b>			
<40 years	223	14.0±1.1	df=308, t= 5.9, p= 0.001
>40 years	87	15.5±0.7	
<b>Hours spend in practice/day</b>			
0<5 hours	44	13.7±1.4	df=309, F= 14.4, p= 0.00
5-10 hours	98	14.0±1.1	
>10 hours	168	14.7±1.1	
<b>Practice scores</b>			
<b>Gender</b>			
Males	209	16.1±1.2	df=308, t=0.4, p=0.00
Females	101	16.0±1.1	
<b>Qualification</b>			
BDS	214	15.9±1.2	df=308, t=-2.9, p= 0.004
MDS	96	16.4±0.9	
<b>Age groups</b>			
<40 years	223	16.3±1.2	df=308, t= 5.9, p= 0.001
>40 years	87	16.6±0.8	
<b>Hours spend in practice/day</b>			
0<5 hours	44	15.7±1.2	df=309, F= 22.6, p= 0.00
5-10 hours	98	16.5±0.8	
>10 hours	168	16.6±0.9	

**[Table/Fig-3]:** Mean knowledge and practice scores among different study variables. t is student's unpaired t-test, F is Analysis of variance and df is degree of freedom

were aware of its procedure and believes that tooth jewellery is a harmless 191 (61.6%), painless 251 (80.9%), inexpensive procedure 221 (71.3%). Total 224 (72.3%) of the dentists are practicing application of tooth jewellery in their clinics, 263 (84.8%) of the dentists believe that its useful for enhancing aesthetics and 275 (88.7%) of them believes it does not involve any kind of surgery. Majority of the dentists 272 (87.7%) believe that it takes a long time to complete and according to 200 (64.5%) of the dentists everyone should adapt this procedure.

A statistically significant difference was observed in the knowledge and practice scores among gender and qualification with males and post graduates being more knowledgeable and doing more practice regarding tooth jewellery (p<0.005). Subjects with more than 40 years of age and those who spend more than 10 hours/day in their clinical practice showed statistically significant difference between knowledge and practice scores (p<0.005) [Table/Fig-3].

[Table/Fig-4] revealed knowledge had significant association with gender, qualification and hours spend in practice (p<0.005). Males had three times more knowledge than females (OR= 3.5, 95%CI: 0.8-2.8). Post graduates dentists were found to be two times more knowledgeable as compared to graduates (OR= 2.3, 95%CI:0.14-1.0). Also those who spend more than 10 hours per day were two times more knowledgeable than the others (OR= 2.31, 95%CI: 0.08-1.1). Practice showed significant association with gender, qualification and hours spend in practice. Males had almost two times more practice than females (OR= 2.4, 95% CI: 0.7-2.7). Post graduate dental practitioners had over two times more practice than the graduates (OR= 2.3, 95%CI; 0.1-0.09). Dental practitioners working for more than 10 hours per day had

95% Confidence Interval				
	Odds Ratio	Lower Bound	Upper Bound	p-value
<b>Gender</b>				
Females	1	.	.	.
Males	3.5	0.8	2.8	0.002
<b>Qualification</b>				
BDS	1	.	.	.
MDS	2.3	0.14	1.0	0.001
<b>Hours spend in practice/day</b>				
0<5hours	1	.	.	.
5-10hours	0.4	0.1	1.2	.
>10hours	2.3	0.08	1.1	0.003
<b>Practice Level</b>				
<b>Gender</b>				
Females	1	.	.	.
Males	2.4	0.7	2.7	0.002
<b>Qualification</b>				
BDS	1	.	.	.
MDS	2.3	0.1	1.09	0.001
<b>Hours spend in practice/day</b>				
0<5hours	1	.	.	.
5-10hours	1.7	0.3	9.3	.
>10hours	5.4	1.6	17.3	0.004

**[Table/Fig-4]:** Knowledge and practice level on the basis of gender, qualification and hours spend in practice of study subjects.

five times more practice (OR=5.4, 95% CI: 1.6-17.3) than the others or so.

## DISCUSSION

Advanced technology, superior skills and vast knowledge can be utilized to create a beautiful smile for people's needs and desires and this can be created with careful consideration to the patients facial form, function and character. The primary concern of oral health educators to impart a passive oral health knowledge and behavior in the society. Therefore, in order to assess the knowledge and practice of tooth jewellery, the present study was conducted among dental practitioners of Tricity, India.

Knowledge, Attitude and Practice (KAP) studies are representative of a specific population to collect information on what is known, believed and performed in relation to the particular topic. These act as three pillars which make up the dynamic system of life itself [9]. Information which can be acquired or gained constitutes our Knowledge. Our thinking towards any situation defines our Attitude. However, reflection of rules and knowledge that lead to action determines our Practice. Therefore, a right knowledge, a positive attitude and a good practice are essential to guide and serve the patients [10].

In the present study, higher number of dentists revealed that tooth jewellery is a harmless, painless, non-surgical and not very time consuming procedure as similar results were shown in the studies done by Kaur H et al., and Jaybala B et al., [3,5]. Similarly, a review by Peter T et al., showed that being so simple, tooth jewellery is not a very costly procedure [7]. Due to these advantages, tooth jewellery has become one of the most popular and latest trends these days.

Kim HJ et al., [8] reported a case describing the management of white spot lesion by using tooth jewellery, wherein white spot lesions can be treated with resin infiltration; a new minimally invasive technique has the advantage that when the microporosities are all filled with resin, the white appearance of the enamel lesions disappears and look identical to sound enamel.

In case of a patient with poor oral hygiene and high risk factors, tooth jewellery is not recommended as it might include plaque accumulation and cariogenic microorganisms around the attachment area and might cause secondary caries. The Canadian Dental Association Board of Directors has also described about tooth jewellery and in their published information it was well addressed that adequate pre and post care should be taken while using tooth jewellery [11].

In the present study, Mean Knowledge and Practice scores showed significant association with gender, qualification and hours of practice. While considering the gender, males had three times more knowledge (OR=3.5, 95% CI: 0.8-2.8) than females. The reason behind could be that males are more clinically oriented than females. However, dental practitioners who are MDS have two times more knowledge (OR= 2.3, 95%CI: 0.14-1.0) than BDS. This is due to their qualification as they might have more exposure about the new and latest trend and hence they have more knowledge. Two times more knowledge was observed in the dentists spending more than 10 hours per day in their clinics than those spending less time (OR= 2.3, 95% CI: 0.08-1.1). The reason behind might be due to more working hours leads to more exposure and therefore more knowledge.

Aesthetics can be enhanced with the help of tooth jewellery and by doing so, elevates the patients self esteem and self confidence. Tooth jewellery should be indicated only in patients with good oral hygiene maintainence. As the attachment area of tooth gem is highly prone for plaque accumulation. The concerned area has to be kept extremely clean as possible and should not be advised in a patient with high caries index [12]. Dental practitioners should discuss with patients regarding the potential risks involved with tooth jewellery as well as recommendations for good oral hygiene and management of existing tooth jewellery that helps to reduce damaging effects. In the present study, mean practice scores of males were higher and were found to have almost two times more practice than females (OR= 2.4, 95% CI: 0.7-2.7). This shows males having more practice due to the fact that males are keener to work in their clinic than females. Post graduates dentists have almost two times more practice than graduates (OR= 2.3, 95% CI: 0.1-1.09). Due to their qualification, more and more people think post graduates have more knowledge than graduates, hence they have more practice.

More than five times practice were observed in the dentists spending more than 10 hours per day as compared to those spend less time or so (OR= 5.4, 95%CI:1.6-17.3). This is due to the fact that dental practitioners spending more time in their clinics and are available for their patients for more hours as compared to those who spend less time and therefore they have more practice than the others. However, this study opens awareness for practicing dentists and explores an area which has not previously been studied in Tricity. It helps to understand the importance of knowledge transfer to the society and how the change in knowledge and practice can improve the use of tooth jewellery by the practicing dentists. This study also enables lay persons to understand and to keep them aware about the importance of tooth jewellery and its associated advantages.

## LIMITATION

Though there's no doubt that in this study, the findings must be interpreted in the context of the limitations encountered. This was a questionnaire based cross-sectional study in which we relied completely on information provided by the respondents, which may lead to bias and misunderstanding of the questions. In this study, it is unlikely that the respondents reacted actly to a short statement on a printed form in the absence of real life qualifying situations. Social stigma and recall bias are also one of the major limitations of our study.

## CONCLUSION

The results of the study showed fair knowledge and practice of the practicing dentists towards tooth jewellery rejecting the null hypothesis. The general lack of awareness of complications related to tooth jewellery needs to be addressed by the dentists. Therefore, more studies are required so that detailed information about knowledge and practice about tooth jewellery among dentists are gathered. Also, the maintenance of the oral hygiene, organizing educational programmes regarding tooth jewellery may be a starting point; however, the treating dentist also plays an active role in examining and informing patients with tooth jewellery on the possible short and long term complications associated with this form of body art.

## ACKNOWLEDGEMENT

The authors would like to thank the study participants for their participation and kind cooperation during the study.

**Conflict of interest and funding:** The authors declare that they have no conflicts of interest and designed the study project as their own initiative. The study was performed in Tricity, India and this study did not have any financial support or funding.

## REFERENCES

- [1] Yadav P, Mohapatra AK, Jain A. Oral piercing/ART-fashion or risk. *J Adv Med Dent Sci Res.* 2014;2(2):100-03.
- [2] Ferguson H. Body piercing. *BMJ.* 1999;319:1627-29.
- [3] Kaur H, Jain P, Dutta K. Dental enhancements and tattoos- current trends in aesthetic dentistry. *Int J Res Dent.* 2014; 4(3):48-53.
- [4] Vazhiyodan A, Mohan S, Kayal VG, Khan R. Sparkling smile-dental jewellery. *J I Dent.* 2013; 1(1):1-3.
- [5] Jaybala B, Dhruvi P, Arpit P, Darmina J. Fashion trends in Dentistry. *J Res Med Dent Sci.* 2014; 2(1):102-04.
- [6] Patil AG. Tooth jewellery: A simple way to add sparkle to your smile. *Ind J Dent Adv.* 2010; 2(4):356-58.
- [7] Peter T, Titus S, Francis G, Alani MM, George AJ. Ornamental dentistry- an overview. *J Evolution Med Dent Sci.* 2013; 2(7):666-76.
- [8] Kim HJ, Karanxha L, Park SJ. Non-destructive management of white spot lesions by using tooth jewellery. *Restor Dent Endod.* 2012; 37(4):236-39.
- [9] Prabhat MPV, Sudhakar S, Kumar BP. Knowledge, attitude and perception (KAP) of dental undergraduates and interns on radiographic protection- a questionnaire based cross-sectional study. *J. Adv Oral Research.* 2011; 2(3):1-4.
- [10] Asawa K, Gupta VV, Tak M, Nagarajappa R, Chaturvedi P, Bapat S et al. Dental sealants: knowledge, value, opinion and the practice among dental professionals of Bathinda City, India. *Adv Prev Med.* 2014(2014):1-7.
- [11] [http://www.gov.mb.ca/health/publichealth/environmenthealth/protection/docs/11884169\\_25s3.pdf](http://www.gov.mb.ca/health/publichealth/environmenthealth/protection/docs/11884169_25s3.pdf) last accessed on 2015-04-15.
- [12] Sharma M, Sharma RK, Upadhyay M, Mishra P. Making a fashion statement with dental jewellery. *I J Pre Clin Dent Res.* 2014; 1(3):53-55.

### PARTICULARS OF CONTRIBUTORS:

1. Postgraduate Student, Department of Public Health Dentistry, Swami Devi Dyal Hospital and Dental College, Panchkula, Haryana, India.
2. Senior Lecturer, Department of Public Health Dentistry, Swami Devi Dyal Hospital and Dental College, Panchkula, Haryana, India.
3. Head of Department, Department of Public Health Dentistry, Swami Devi Dyal Hospital and Dental College, Panchkula, Haryana, India.
4. Senior Lecturer, Department of Public Health Dentistry, Swami Devi Dyal Hospital and Dental College, Panchkula, Haryana, India.
5. Reader, Department of Public Health Dentistry, Swami Devi Dyal Hospital and Dental College, Panchkula, Haryana, India.
6. Senior Lecturer, Department of Public Health Dentistry, Swami Devi Dyal Hospital and Dental College, Panchkula, Haryana, India.

### NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Sonal Bhatia,  
Postgraduate Student, Department of Public Health Dentistry, Swami Devi Dyal Hospital and Dental College,  
Panchkula, Haryana-134118, India.  
E-mail: swittybhatia@rocketmail.com

**FINANCIAL OR OTHER COMPETING INTERESTS:** None.

Date of Submission: **Dec 27, 2015**  
Date of Peer Review: **Jan 24, 2016**  
Date of Acceptance: **Feb 15, 2016**  
Date of Publishing: **Mar 01, 2016**