

Attitude towards Tooth fillings in South Indian population – A cross sectional study

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Abstract:

Introduction : Attitude towards dental care plays a vital role in determining the oral health of an individual. Understanding patient's attitude will enable dentist's to transform their perception to more conservative or preventive treatment. The present study aimed to assess the attitude of dental patients towards tooth fillings among South Indian population.

Material and Methods : The present cross-sectional study was conducted in the Outpatient Department of Conservative Dentistry and Endodontics, Government Dental College and Hospital, Hyderabad. An eight-item, six- point Likert scale attitude questionnaire was utilized for this study. The participants were explained about the purpose of the study and Informed consent was taken. Details like Age, Gender, Educational status and history of previous tooth fillings were recorded. Data was analyzed using SPSS soft ware. $P < 0.05$ was statistically significant.

Results : The overall mean attitude scores towards tooth fillings of the present study population were positive (0.05 ± 0.78). This shows that the participants had optimal attitudes towards tooth fillings . Majority of the participants perceived that tooth filling treatments completely eliminates tooth ache Q1 (1.97 ± 1.54), A filled tooth allows one to eat cold and hot food stuff without any problem Q5 (1.38 ± 2.05) and tooth fillings are better treatment for tooth aches than tooth extractions. Participants with lower educational levels (illiterates) reported better attitude scores and were keen on saving the teeth instead of tooth extractions compared to higher educational level groups. Multiple linear regression analysis revealed age and gender to be significant variables for the overall attitude scores both in Model 1 and Model 2.

Conclusion : The results of this cross sectional study concludes that age and gender are significant variables influencing the attitude towards tooth fillings and educational status had no influence on the attitude of the sample population. Positive attitudes observed in this study shows their willingness to utilize dental services promptly.

Key words: Attitude, Tooth fillings, Dental Health, India, Educational qualification

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I. Introduction

Personal oral health behaviour is a key psychosocial determinant which contributes largely to decision making while seeking professional intervention. One such factor for measuring behaviour is attitude(1). Attitude is a complex combination of behaviour, motivation, personality, beliefs and values(2). It is a learned tendency to evaluate things in a certain way. It is also a consistent response between persons feeling and a particular behavior.(3)

Attitudes are an integral part of social schemes. According to McGuire these are defined as responses that locate, objects of thought on dimensions of judgment. (4)

Understanding patient's attitude will enable dentist's to transform their perception to more conservative or preventive treatment. For example, shift in the choice of treatment for tooth ache from tooth extraction to tooth filings. Hence tooth filings have gained popularity. Thus, even the Indian government's oral health care services are providing free tooth filings to the patients. Therefore with ease of accessibility to dental care, the onus of utilizing tooth filings for toothache is mostly determined by patients attitude. Some factors governing the attitude towards tooth filings are Fear of pain, lack of knowledge of restorative care, past negative experiences, lack of habits for regular dental check-ups (5).

Comprehending the vital role of attitude towards a treatment modality, the current study aimed to evaluate the attitude of SouthIndian dental patients towards tooth filings.

II. Materials and Methods

The present cross-sectional study was conducted in the Outpatient Department of Conservative Dentistry and Endodontics, Government Dental College and Hospital, Hyderabad. The study protocol and the study design were approved by the institutional review board. Participation was voluntary and a written informed consent was obtained from the participants.

A pilot study was conducted on 30 patients to determine the feasibility of the study. Taking 95% level of confidence and 5% error a sample size was estimated to be 415 using the formula $n = Z^2pq / d^2$. Where Z= Standard normal variate value (Z-value)=2.58, P=Prevalence=62.71, q=100-p, d=precision (%)=4. Patients above 18 years and below 60 years of age who consented to the study, were included. Patients with special needs and unable to understand the questionnaire were excluded.

Survey Instrument

The data were collected using a self-administered questionnaire designed both in English and vernacular languages (Telugu and Hindi). The survey instrument was an eight-item, six- point Likert scale with close ended attitude questionnaire by Nyamuryekung'e KK et al . The 6-point Likert scale for each statement had a highly positive attitude (+3) to a highly negative attitude (-3). The sum of these scores from the eight statements served as a final attitude sum score for each respondent. The questionnaire also included information on demography (sex, age, and educational status), reasons of the visit, importance of periodic visits and history of previous tooth fillings.

Data analysis

Validity of the questionnaire was tested using Cronbach's alpha. (Need to address this, asked by the reviewers) The data was analysed using SPSS software (SPSS14,IBM). The mean and standard deviations were calculated. Statistical differences in proportions were compared using chi-square tests, ANOVA and Mann Whitney U test . Linear regression analysis was used to explore the associations of socio-demographic variables and previous tooth fillings with attitudes on tooth filling treatment. Linear regression analysis for attitude score was done with age, gender and educational status in Model 1 and in Model 2 previous filings was added. Statistical significance was set at $p < 0.05$.

III. Results

A total of the 460 questionnaires distributed out of which 420 were completed and utilized for the study. The response rate was 91.3%. The questionnaire exhibited good validity in all languages (English - 0.82; Hindi – 0.75, Telugu – 0.79)

The mean age of the participants was 31.4 ± 9.91 years with 8.3% of participants between 18-30 years , 53.8% belonging to 31-40 years, 20.5% between 41-50 years and 17.4% of 51-60 years.. Of the total participants 62.4% were females and 37.6% were males. Majority of participants possessed high school education (50.7%). It was observed that around 71.4% of participants had visited dental hospital, out of which 70.95% for the complaint of pain. (Table 1)

Table 2 is the comparison of responses based on the variables. Based on the responses to the questions it was seen that gender did not reveal any significant difference. Whereas for educational qualification significance was noted to most of the questions except for Q2 and Q4. Age group revealed significant difference for Q3, Q4, Q6 and Q8.

Table 3 shows the overall mean attitude scores towards tooth fillings was 0.05 ± 0.78 indicating a positive attitude. Though most of the questions had positive mean scores, negative mean scores were seen for Q3, Q4, Q6 and Q7.

In Table 4 question wise mean scores were compared based on age group, none of the questions revealed a significant difference. Higher age groups i.e 41-50 and 51-60 revealed higher mean scores 1.67 ± 7.13 and 1.29 ± 6.43 .

Table 5 showed that males had a significantly higher negative mean score for Q3 compared to females ($p=0.02$). On the other hand educational qualification revealed a significant difference for total score and Q6, Q7, Q8 with illiterates showing a better positive attitudes towards tooth fillings.

Table 6 shows the Multiple linear regression analysis revealed age and gender to be significant variables for the overall attitude scores both in Model 1 and Model 2.

IV. Discussion

Oral health is one of the ignored components of health care in India. Despite the advances in dental technology, treatment protocols and scientific understanding of oral disease, significant disparities still exist in accessibility and effective use of dental care. Utilization of dental services however is low and it greatly depends on the attitude of the patients as stated by Tobias B et al.(6) As there were no published literature that assessed the attitude of dental patients towards tooth fillings attending the tertiary care center in Hyderabad, this cross sectional study was undertaken to evaluate the same.

A questionnaire designed by Nyamuryekunge KK et al (7) to evaluate the attitude of dental patients towards tooth fillings was used in this study. It has revealed a good internal reliability of 0.799 (8). Since oral health behavior is multifactorial demographic variables such as Age, Gender and Educational Qualification were considered in this study. The overall mean score was 0.05 ± 0.78 which reflects a positive attitude towards tooth fillings which were in contrast to the previous studies conducted in Indian population.

A study by Singh et al (9) have stated that there is a dearth of knowledge and careless attitude among subjects with regard to dental health and Sen et al (10) has also stated that the knowledge and attitude about oral health were found to be nonsatisfactory in their respective study samples. This variation could be due to the difference in the questionnaire used. However when compared to Tanzanian adult population(7) which used the same questionnaire, the overall mean attitude score was negative (-1.99).

In multiple logistic regression analysis age and gender emerged as significant variables influencing the attitude towards tooth fillings. Younger age group showed negative attitude towards tooth fillings which was in accordance with a previous study (11). This could be because of the less felt need for dental care among this group. Additionally in the older age groups, the experience of tooth fillings must have played an important role in the daily oral health related quality of life like reduced pain and better mastication. However question wise comparison of overall mean scores did not reveal any significant difference based on age group.

The findings of the present study suggest that males had more negative attitude towards tooth fillings which could be because most of the dental procedures might require multiple visits to dental office (like teeth with deep caries management and pulp capping procedures). This might in turn affect their routine work activity, contributing to the findings of this study. This is further supported by the findings of this study wherein more males have negative attitude towards believing that tooth filling might cause harm later by causing another toothache (Q3) ($P=0.02$).

A surprising finding of this study is the inverse relation of educational status with attitude towards tooth fillings. Nevertheless educational status (illiterates) had more positive attitude (5.38 ± 7.50) compared to graduates (-0.31 ± 5.83).

This may suggest lower expectations and greater satisfaction among those with lower educational status which did not influence the attitude based on liner regression analysis in both models. Unlike other studies wherein educational qualification had greater influence on the attitudes. Higher the educational qualifications better positive attitudes (12,13,14).

Though the present study makes an attempt to study the attitude of Indian population results revealed that the attitude towards tooth fillings is influenced variedly by age, gender and educational qualifications. As also suggested by Petty et al (15) knowledge may be an important constituent during attitude formation and its provision influences dental attitudes.

The merits of this study being done in a government institute, hence other demographic variable's of socioeconomic status were not considered. Therefore the cost barrier to utilize dental care doesn't need

consideration in this study. The questionnaire being formulated in the local language was an added advantage to this study.

Demerits of this study are the type of filling was not included. It was a single institutional study. Self report of the questionnaire subjects it to social desirability bias. Since this study was done in the outpatient department of Conservative Dentistry and Endodontics it might account for bias also revealed by this study findings where in majority of them visited due to pain. History of previous tooth fillings was not considered for evaluation in the questionnaire as it might have been done in different dental settings which could attribute to varied experiences.

V. Conclusion

Positive attitudes observed in this study shows the willingness of the current study population to avail the benefits of restorative care. The results of this cross sectional study concludes that age and gender are significant variables influencing the attitude towards tooth fillings and educational status had no influence on the attitude of the sample population. Based on these findings the health professionals need to focus on the specific factors while designing the oral health educational and awareness programs to increase their levels of knowledge. Therefore it could foster the utilization of restorative services by the general population.

Since this is one of the first study which assessed the attitudes of patients towards tooth fillings in a cohort of Indian population, this gives us scope for further research to evaluate various parameters and its association with attitude.

References

- [1]. Agel M. Psychosocial determinants of oral health behaviour in adolescents. *EvidBased Dent.* 2016 ;17(3):72.
- [2]. Kendra Cherry. Attitudes and Behavior in Psychology. [Updated on May 03, 2020]. Available from www.verywellmind.com
- [3]. Doshi D, Reddy BS, Kulkarni S, Karunakar P. Self-reported attitudes and beliefs towards dental care among a South Indian population. *Oral Health Prev Dent.* 2014;12(2):125-31
- [4]. Källestål C, Dahlgren L, Stenlund H. Oral health behaviour and self-esteem in Swedish children. *SocSci Med.* 2000; 51(12):1841-9.
- [5]. Devraj CG, Eswar P. Association Between Socio-demographic Factors and Dental Service Utilization Among People Visiting a Dental College Hospital in India- A Descriptive Cross-sectional Study. *Indian J Stomatol* 2011;2(4):212-15.
- [6]. Tobias B, Smith JM. Barriers to dental care, and associated oral status and treatment needs, in an elderly population living in sheltered accommodation in West Essex. *Br Dent J* 1987;163:293-5.
- [7]. Nyamuryekung KK, Lahti SM, Tuominen RJ. Attitudes towards tooth fillings in Tanzanian adults and its association with previous filling experience. *BMC Oral Health* 2018; 18:12.
- [8]. Sakaret E, Berg E, Raadal M, Kvale G. Reliability and validity of the dental satisfaction questionnaire in a population of 23 year olds in Norway. *Community Dent Oral Epidemiol* 2004;32:25-30.
- [9]. Singh A, Gambhir RS, Singh S, Kapoor V, Singh J. Oral Health : How much do you know?- A study on knowledge, attitude and practices of patients visiting a North India Dental School. *Eur J Dent* 2014;8:63-7
- [10]. Sen N, Mandal A, Bhat N, Asawa K, Sultane P, Chhabra S, Chatterjee S, Vashistha V. Oral Health Related Knowledge, Attitude And Practices Among Patients Attending The Department Of Public Health Dentistry Of A Dental Hospital In Udaipur. *Int J Prev Clin Dent Res.* 2017;4(1):1-7
- [11]. Riley JL, Gilbert GH, Heft MW. Dental attitudes: proximal basis for oral health disparities in adults. *Community Dent Oral Epidemiol.* 2006;34:289-98.
- [12]. Kohli S, Bhatia S, Kaur A, Rathakrishnan T. Patients awareness and attitude towards dental implants. *Indian J Den* 2015;6:167-71.
- [13]. Gharbieh EA, Saddik B, Faramawi M El, Hamidi S, Basheti M. Oral Health Knowledge and Behavior among Adults in the United Arab Emirates. *Biomed Res Int.* 2019, vol. 2019,1-7
- [14]. Ugur ZA, Gaengler P. Utilisation of dental services among a Turkish population in Witten, Germany. *Int Dent J* 2002 ;52(3):144-50.
- [15]. Petty RE, Wegener DT, Fabrigar LR. Attitudes and attitude change. *Annu Rev Psychol.* 1997;48:609-47.

Table 1: Distribution of respondents based on variables

Variables (Groups)	Subgroups	No. of respondents (n) %
Age	18-30	35(8.3)
	31-40	226 (53.8)
	41-50	86(20.5)
	51-60	73(17.4)
Gender	Male	158(37.6)
	Female	262(62.4)
Education	Primary	52(12.4)
	High school	213(50.7)
	Graduation	129(30.7)
	Illiterate	26(6.1)
Visit to dentist	Yes	300(71.4)
	No	120(28.5)
Reason for visit	Routine	91(21.67)
	Pain	298(70.95)
	Appointment	31(7.38)
Previous fillings	Yes	304(72.38)
	No	116(27.62)

Table 2: Comparison of responses based on variables

Variable	Age	Gender	Educational Qualifications
Q1	0.13	0.06	0.01*
Q2	0.32	0.14	0.14
Q3	0.001*	0.15	0.01*
Q4	0.03*	0.18	0.52
Q5	0.45	0.33	0.007*
Q6	0.02*	0.17	0.009*
Q7	0.64	0.13	0.005*
Q8	0.006*	0.71	0.001*

Table 3: Overall Mean Attitude Scores Of Statements Measuring Attitude Towards Tooth Fillings

S.NO	Questions/items	Total
1	Tooth filling treatment completely eliminates toothache	1.97±1.54
2	Tooth fillings are expected to dislodge after a short while	0.27±2.23
3	Tooth fillings may cause harm later by causing another toothache	-1.14±2.04
4	Tooth fillings lead to a subsequent slow fracture of filled teeth	-0.97±2.05-
5	A filled tooth allows one to eat cold/hot foodstuffs without any problems	1.38±2.05
6	Despite receiving tooth fillings, you will have to extract the tooth eventually	-1.04±2.00
7	Extraction is the only sure way to treat toothache	-1.60±1.90
8	Tooth fillings are better treatment for toothaches than tooth extractions	1.60±1.97
Overall Mean Attitude Score		0.05±0.78

Table 4: Questionwise Mean Score Comparison Based On Age Groups

Items	18-25 yrs	26-35yrs	36-45yrs	46-60 yrs	p-value
Q1	2.20 ±1.30	2.00±1.43	1.64±1.93	2.16±1.39	0.25
Q2	0.11±2.19	0.18±2.22	0.19±2.31	0.73±2.17	0.30
Q3	-1.31 ±1.92	-1.21±1.94	-0.92±2.30	-1.11±2.12	0.76
Q4	-1.46±1.65	-0.98±1.97	-0.63±2.28	-1.11±2.19	0.22
Q5	1.00±2.03	1.42±2.00	1.47±2.17	1.30±2.12	0.37
Q6	-1.40±1.79	-1.19±1.92	-0.64±2.16	-0.88±2.09	0.13
Q7	-1.66±1.85	-1.67±1.82	-1.21±2.09	-1.79±1.91	0.09
Q8	1.20±2.11	1.47±2.08	1.78±1.91	1.99±1.55	0.51
Total	-1.31±4.71	0.03±5.90	1.67±7.13	1.29±6.43	0.07

Table 5: Questionwise Mean Score Comparison Based Comparison of Gender and Educational Qualification

Items	Male	Female	p-value	Primary	High School	Graduation	Illiterate	p-value
Q1	2.11± 1.24	1.89± 1.69	0.82	1.71± 1.55	2.04± 1.46	2.00± 1.50	1.77± 2.16	0.22
Q2	0.10± 2.22	0.37± 2.23	0.29	0.92± 1.97	0.05± 2.22	0.31± 2.23	0.62± 2.58	0.07
Q3	-1.42± 1.89	-0.97± 2.12	0.02*	-0.65± 2.16	-1.24± 1.98	1.38± 1.89	-0.12± 2.67	0.06
Q4	-1.11± 1.96	-0.88± 2.10	0.24	-0.63± 2.07	1.07± 2.02	-0.99± 2.01	-0.69± 2.51	0.46
Q5	1.54± 1.90	1.27± 2.14	0.55	0.81± 2.09	1.49± 2.01	1.42± 2.01	1.38± 2.48	0.07
Q6	-1.12± 1.84	-1.00± 2.09	0.90	-0.27± 2.12	-1.30± 1.89	-1.15± 1.93	0.04± 2.27	0.001*
Q7	-1.85± 1.66	-1.44± 2.02	0.11	1.46± 1.88	-1.54± 1.94	-2.02± 1.52	-0.19± 2.56	0.005*
Q8	1.60± 1.94	1.60± 2.00	0.86	1.13± 1.94	1.66± 1.96	1.50± 2.07	2.58± 1.24	0.004*
Total	-0.16±5.84	0.85±6.42	0.08	1.56±5.63	0.08±6.16	-0.31±5.83	5.38±7.50	0.0001*

Table 6: Multiple Linear Regression Analysis Of Attitude Towards Tooth Fillings

Independent variables	Model 1 [#] p-value	Model 2 [†] p-value
Intercept	0.0044*	0.0034*
Age	0.0095*	0.0125*
Gender	0.0657**	0.0703**
Educations	0.1514	0.1511
Previous fillings		0.4742

*p<0.05, **p<0.10

Model 1: Linear regression with age, gender and educational status

R=0.1599, R²=0.0255, F(3,416)=3.6424 p<0.05, S, Std.Error of estimate: 6.1620

† Model 2 :Linear regression with age, gender, educational status and previous fillings

R=0.1637, R²=0.0267, F(4,415)=2.8569 p<0.05, S, Std.Error of estimate: 6.1656

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