

Knowledge and Awareness about Importance of Aesthetics in Dentistry

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Abstract

Esthetic dentistry can be defined as the art and science of dentistry applied to create or enhance beauty of an individual within functional and physiological limits. Esthetics is the branch of philosophy dealing with beauty. In dentistry, The theory and philosophy that deal with beauty¹ and the beautiful, especially with respect to the appearance of a dental restoration, as achieved through its form of colour. The aim of this study is to assess the dental esthetics awareness among dental students. Survey was conducted online. Questionnaire which consists of 10 questions was prepared and distributed through google forms. Study population consists of 100 dental students. This creates awareness about aesthetics and helps to understand the importance of aesthetics and also provide required technology. This studies shows a high level of self consciousness and the findings of the studies prove that even slight variations have greater impact on physiological functional and physical aspects.

Keywords: *Aesthetic dentistry, Beauty, appearance of teeth.*

Introduction

Esthetics is the branch of philosophy dealing with beauty. In dentistry, The theory and philosophy that deal with beauty¹ and the beautiful, especially with respect to the appearance of a dental restoration, as achieved through its form of colour. Esthetic dentistry can be defined as the art and science of dentistry applied to create or enhance beauty of an individual within functional and physiological limits. The natural of the system is emphasized by showing by examples from nature and how artists and designers use it² when overall dental appearance is considered several factors of significance, including tooth colour, shape, and position and general arrangement of teeth³

Previous research states that advancement in dental care means that today's adults expect not only to keep most of their teeth for most of their lives, but that they should look good as well.⁴

And however even as dental professional we may not fully realize what a life changing event it is have an undesirable smile⁵

Compared to previous studies the level of aesthetic requirement in clinical practise has increased over the past decade, and this made it necessary for dentist to explore this field in order to satisfy the existing demand on this field⁶ and also aesthetic dentistry provides a new dimension of treatments that is rewarding and gives the dentist another means of artistic expression⁷ and hence aesthetic dentistry is applied to create or enhance beauty of an individual within functional and physiological limit. The aim of this study is to assess the dental esthetics awareness among dental students.

Materials and Method

Study design, Area and study population:

A survey was conducted among dental students about knowledge and awareness about aesthetics in dentistry. The sample size of this survey is a total of 100 people. Participants who belong to dental precipitation in this study were voluntary and no incentives were provided to the participants. The survey was conducted in the month of April 2020.

Study Instruments:

A questionnaire was prepared after extensive review of the existing literature. The questionnaire was reviewed and amendments were made to improve clarity of pertinent questions and eliminate ambiguous responses. The survey instrument was a structured questionnaire with both open and close ended questions. It consists of a brief introduction regarding the purpose of the study, questions pertaining to demographic data and question regarding research objective 10 questions were circulated to the participants in a google.⁸

Data Analysis

Only completely filled online forms were included in the study. The full response was verified by two reviewers and the controlled data was entered on the same day. The entered data were analysed using SPSS. Descriptive analysis was performed to calculate frequencies of categorical variables.^{9,10,11,12,13}

Results and Discussion

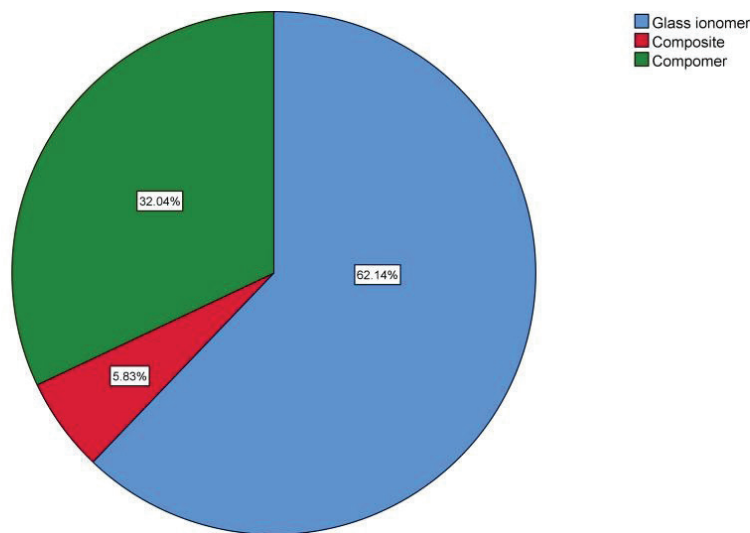


FIGURE 01: Pie chart depicts that knowledge and awareness among study participants regarding restoring class V cavity. 62.14% responded for glass ionomer (blue), 5.83% responded for composite (red), 32.04% responded for compomer (green)

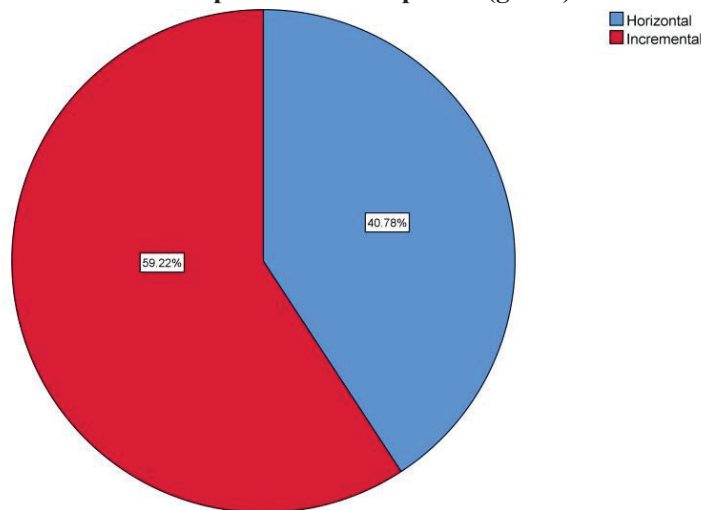


FIGURE 02: Pie chart depicts that Knowledge and awareness among study participants regarding technique used for placing composite resin restoration. 40.78% responded for horizontal technique(blue), 59.22% responded for incremental technique (red)

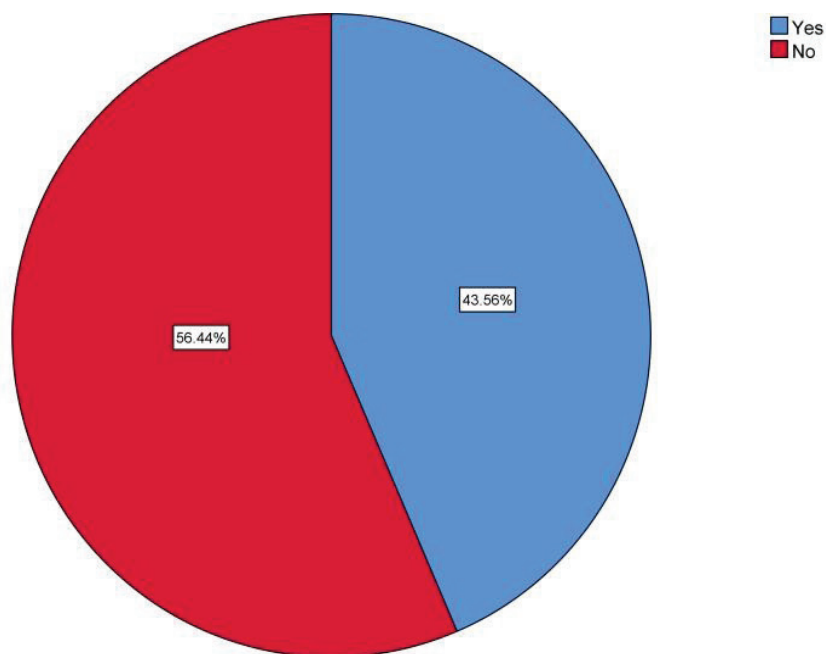


FIGURE 03: Pie chart depicts that Knowledge and awareness among study participants regarding importance of retainer. 43.56% responded for yes (blue), 58.44% responded for no (red)

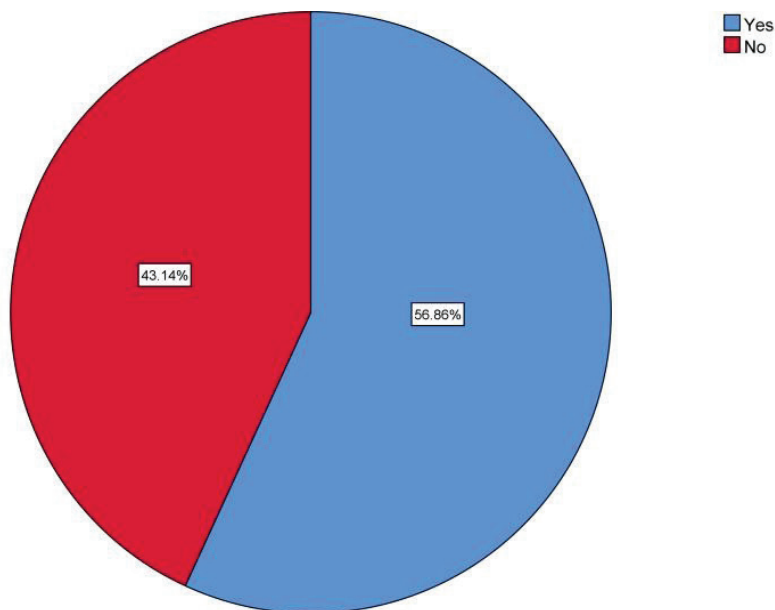


FIGURE 04: Pie chart depicts that Knowledge and awareness among study participants regarding importance of retainer. 56.86% responded for yes (blue), 43.14% responded for no (red)

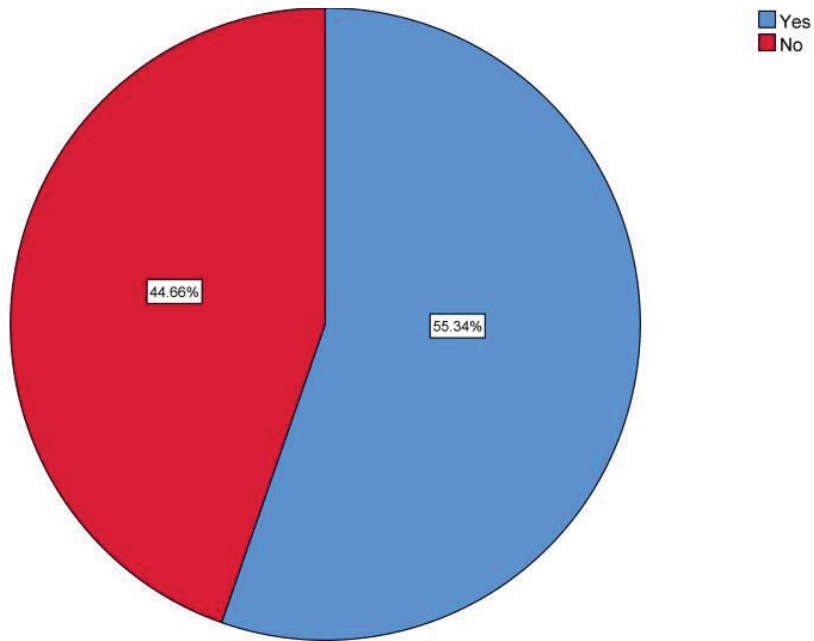


FIGURE 05: Pie chart depicts that knowledge and awareness among study participants regarding porcelain bonding veneer. 55.34% responded for yes (blue), 44.66% responded for no (red)

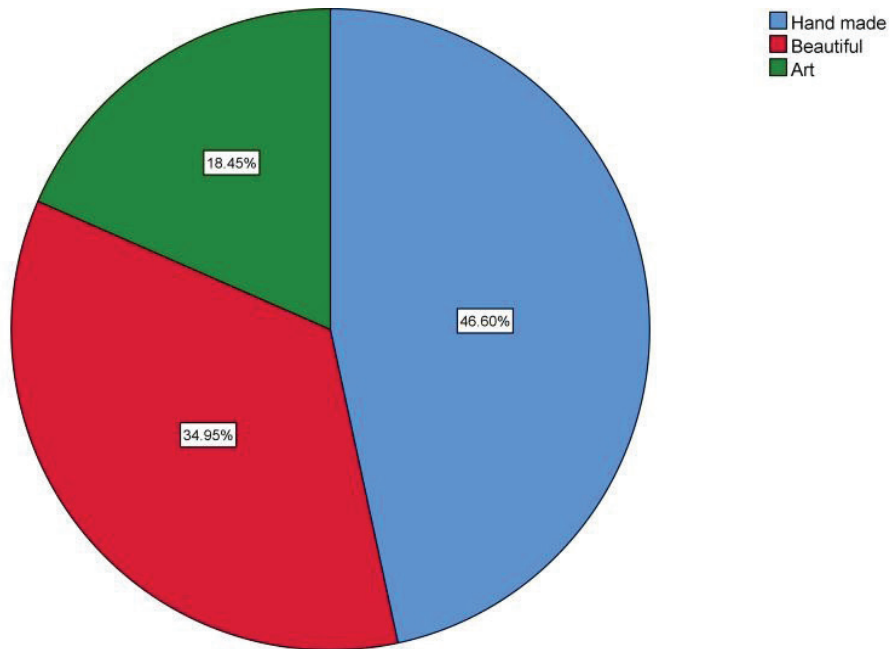


FIGURE 06: Pie chart depicts that awareness among study participants regarding aesthetics. 46.50% responded for hand made (blue), 34.56% responded for beautiful (red), 18.45% responded for art

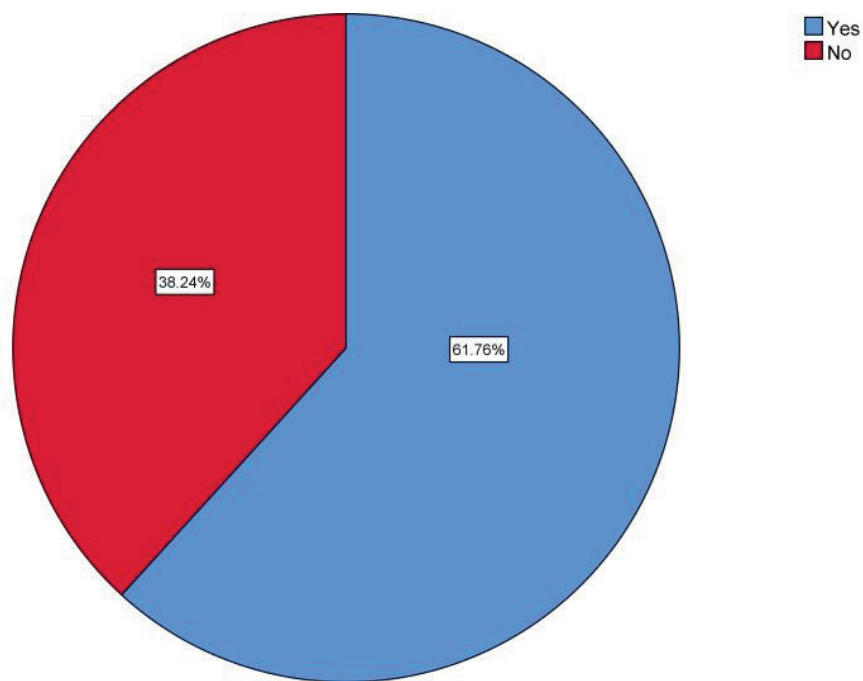


FIGURE 07: Pie chart depicts that awareness among study participants regarding snap on smile and evidence based practice. 61.75% responded for yes (blue), 38.24% responded for no (red)

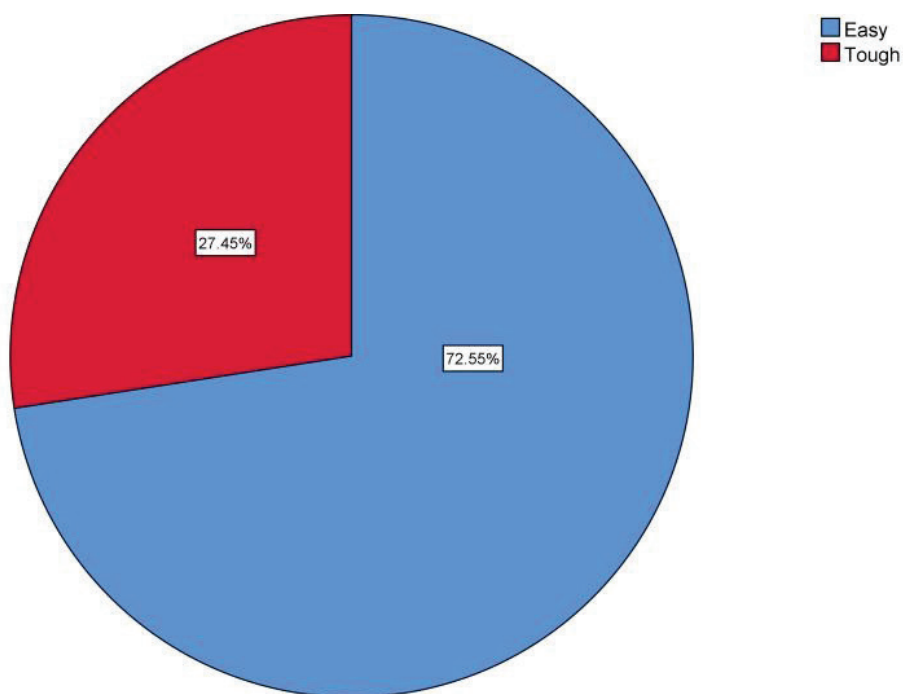


FIGURE 08: Pie chart depicts that awareness among study participants regarding importance of shade matching in prosthodontics. 72.55% responded for easy (blue), 27.45% responded for tough (red)

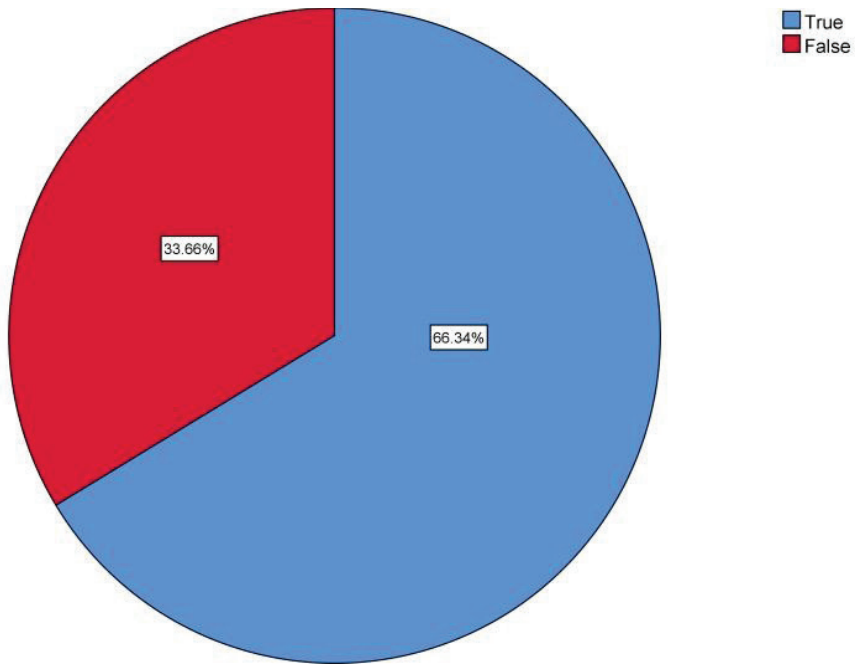


FIGURE 09: Pie chart depicts that awareness among study participants regarding importance of shade matching in prosthodontics. 72.55% responded for easy (blue), 27.45% responded for tough (red)

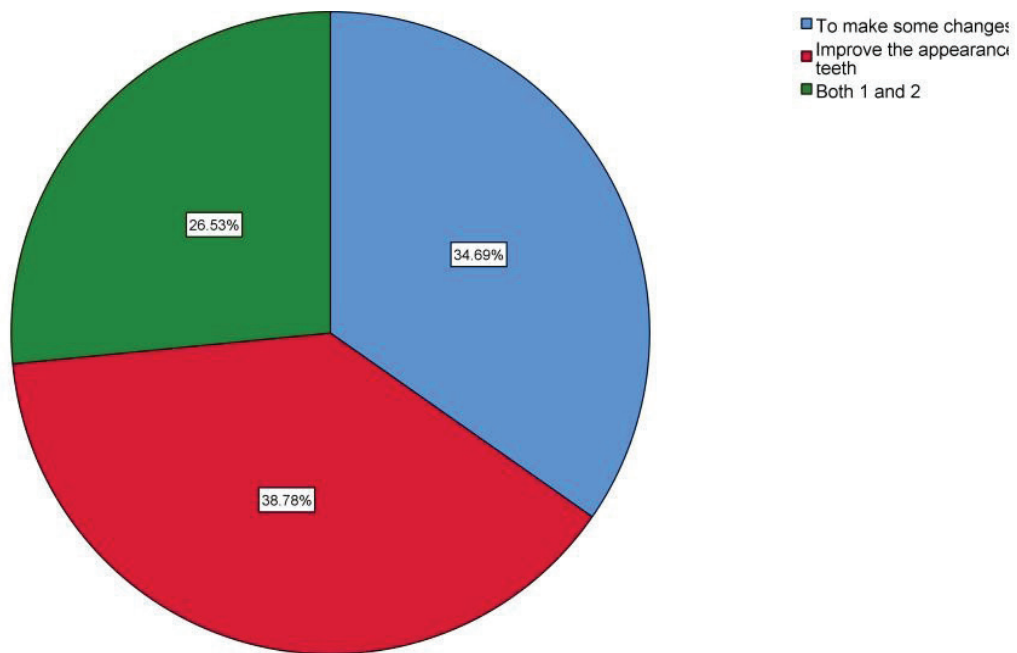


FIGURE 10: Pie chart depicts that awareness among study participants regarding importance of shade matching in prosthodontics. 34.60% responded for making some change (blue), 38.78% improve the appearance (red), 26.53% responded for both

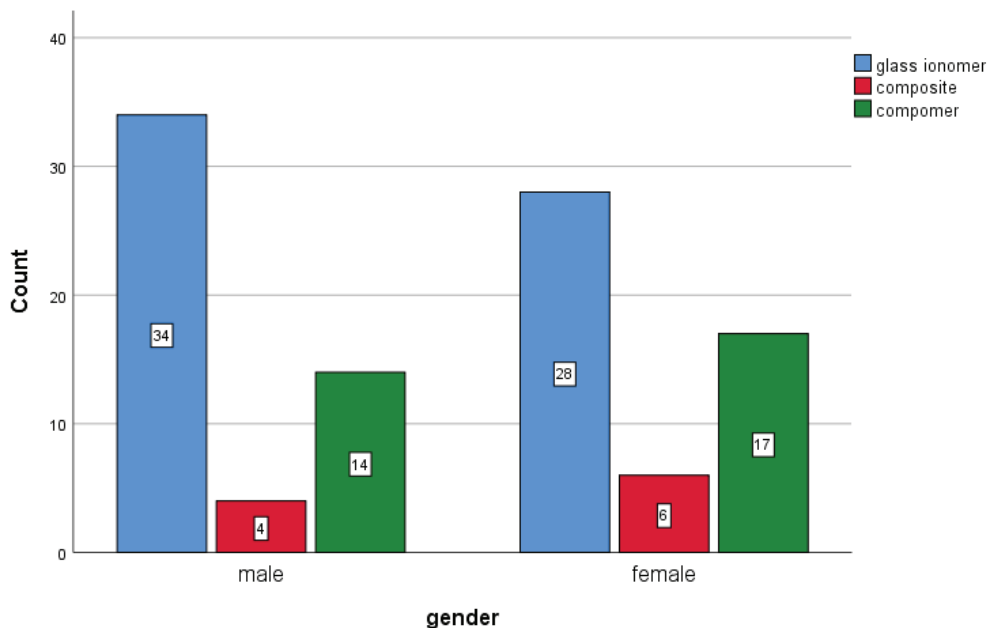


Figure 11: Bar chart represents the association between gender and awareness in restoring class V cavity. X axis represents the gender and Y axis represents the number of participants responding regarding awareness in restoring class V cavity by glass ionomer (blue), composite (red) and compomer (green). Males(34%) are more aware of restoring class V cavities by glass ionomer than females (28%). Chi Square test was done and the association was found to be statistically not significant. Pearson’s Chi Square value:1.261, P value:0.532 (>0.05), Statistically not significant.

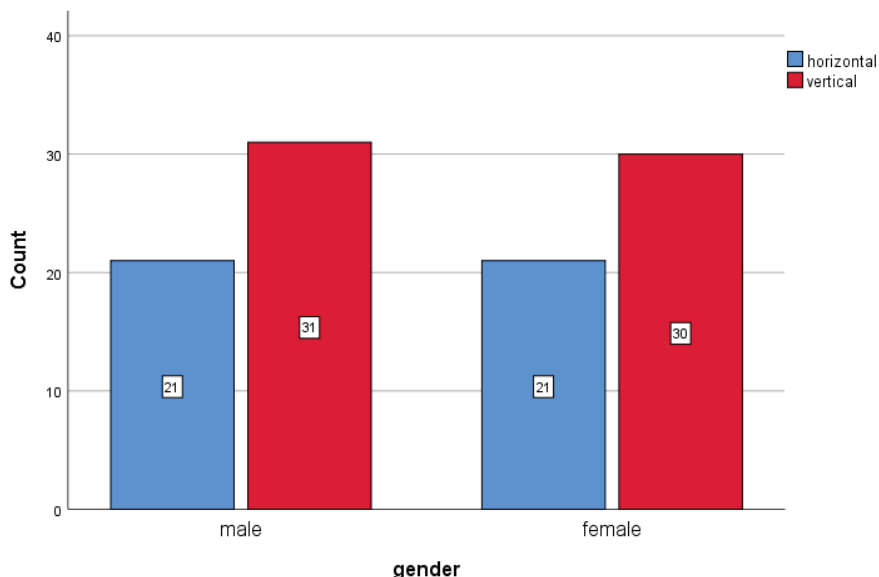


Figure 12: Bar chart represents the association between gender and technique used for placing composite resin restoration. X axis represents the gender and Y axis represents the number of participants regarding technique used for placing composite resin restoration by horizontal (blue) and incremental/vertical (red). Males (31%) are more aware of the technique used for placing composite restoration by vertical technique than females (30%). Chi Square test was done and the association was found to be statistically not significant. Pearson’s Chi Square value:0.007 , P value:0.0935(>0.05), Statistically not significant.

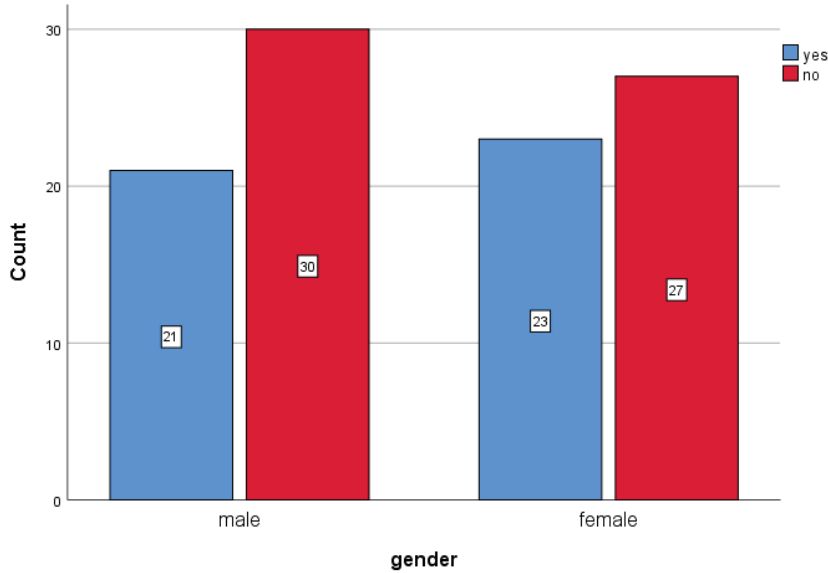


Figure 13: Bar chart represents the association between gender and Knowledge and awareness among study participants regarding the importance of retainers. X axis represents the gender and Y axis represents the number of participants responding regarding the importance of retainer. Females(23%) are more aware about the importance of retainers than males (21%). Chi Square test was done and the association was found to be statistically not significant. Pearson’s Chi Square value:0.239, P value:0.625 (>0.05), Statistically not significant.

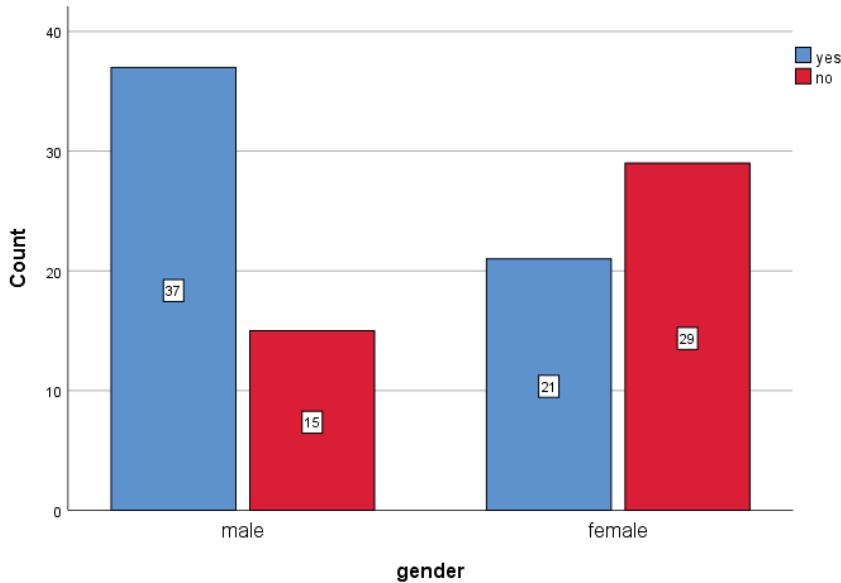


Figure 14: Bar chart represents the association between gender and Knowledge and awareness regarding study results showing the dimension change after composite build up . X axis represents the gender and Y axis represents the number of participants responding regarding study results showing the dimension change after composite build up. Males (37%) are more aware about study results showing the dimension change after composite build up than female (21%).Chi Square test was done and the association was found to be statistically not significant. Pearson’s Chi Square value:8.833, P value:0.003 (<0.05), Statistically significant.

A total of 100 students participated in the survey of these participants 62.4% of them preferred to use glass ionomers for restoring class v cavity, 32.04% of them preferred to use composite and 5.83% of them preferred to use compomer (figure 1). 59.22% of them preferred to use horizontal techniques for placing composite resin restoration, 40.78% of them preferred to use incremental technique (figure 2). 42.72% will tell their patients to wear retainers, 55.34% of them will not tell their patients to wear retainers (figure 3). 56.31% of them answered yes for the study results showing the dimension change composite build up 42.72% answered no (figure 4). 55.34% of them said that porcelain veneer bonding is as strong as enamel bonding veneer, 44.66% of them answered no (figure 5). 34.95% of them said the meaning of aesthetics is beautiful, 46.60% of them answered handmade and 18.45% of them answered that it belongs to art (figure 6). 61.17% of them said that a snap on smile is an evidence based practice and 37.86% of them answered no (figure 7). 71.84% of the students answered that shade matching in prosthodontic is easy and 27.18% of the students answered that shade matching in prosthodontics is tough (figure 8). 65.05% of has accepted aesthetic dentistry is devoted to improving the appearance of teeth , 33.01% of them have not accepted (figure 9). 36.89% of them said that the importance of aesthetics is to improve the appearance of teeth, 33.01% of them answered that the importance of aesthetics is to make some changes, 25.24% of them answered both (figure 10).

The present research has origins from the team of investigators where previous studies were done based on clinical reports, interventional studies like ^{14, 15, 16}, in vitro studies like, ^{10, 11, 12, 9} and systematic reviews ^{14, 17, 18, 19, 20, 21}. Chi square test was done to analyse association between gender and knowledge and awareness in restoring class v cavity in which 34% of the male and 28% of the female answered glass ionomer and 4% of the male and 6% of the female answered composite (P value:0.532). It was found statistically non significant (figure 11). Chi square test was done to analyse association between gender and technique used for placing composite resin restoration in which 21% of the male and 21% of the female answered horizontal technique and 31% of the male and 30% of the female answered incremental technique (P value:0.0935). It was found statistically not significant (figure 12). Chi

square test was done to analyse association between gender and awareness regarding importance of retainer in which 21% of the male and 23% of the female answered yes (P value:0.625), It was found statistically not significant (figure 13). Chi square test was done to analyse association between gender and awareness regarding study results showing the dimension change after composite build up in which 37% of the male and 21% of the female answered yes(P value:0.003). It was found statistically significant (figure 14)

Compared to previous studies, 92.3% of them are satisfied with this smile ²² but in this study only 61.17% of them are satisfied with their smile. The result is different from the previous study and as the population involved is limited in this study²³ This survey shows, more that 85% of the females are satisfied with function of speech and 14.9% of the females are not satisfied with the function of speech whereas in this study 36.89 of them are satisfied in improving the appearance of teeth and 33.01% of them are satisfied in making some changes teeth.²⁴ This study conclude that 26.8% of the people are satisfied with shade matching whereas 70.5% of the people are not satisfied with shade matching but in this study 71.84% of them are satisfied with shade matching and 27.18% of them are not satisfied in shade matching. The results of both studies are almost the same.

Limitations of this study include the sample size, results may vary as it has less population, this study creates awareness about aesthetics and helps us to understand the importance of aesthetics and also provide required technology to improve the educational learning among students.

Conclusion

This study shows a high level of self consciousness and the findings of the studies prove that even slight variation have greater impact on psychological, functional and physical aspects

Acknowledgement: We thank Saveetha Dental College for providing us the support to conduct the study

Conflict of Interest: Nil

Source of Funding : Self

Ethical Clearance: Not Required

References

1. Jyothi S, Robin PK, Ganapathy D, Anandiselvaraj. Periodontal Health Status of Three Different Groups Wearing Temporary Partial Denture. *Research Journal of Pharmacy and Technology* [Internet]. 2017 [cited 2020 Jun 5];10(12):4339–42. Available from: <https://www.indianjournals.com/ijor.aspx?target=ijor:rjpt&volume=10&issue=12&article=046>
2. Levin EI. Dental esthetics and the golden proportion. *J Prosthet Dent* [Internet]. 1978 Sep;40(3):244–52. Available from: [http://dx.doi.org/10.1016/0022-3913\(78\)90028-8](http://dx.doi.org/10.1016/0022-3913(78)90028-8)
3. Qualtrough AJ, Burke FJ. A look at dental esthetics. *Quintessence Int* [Internet]. 1994 Jan;25(1):7–14. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/8190886>
4. Orr C. “State of the art” in aesthetic dentistry. *Br Dent J* [Internet]. 2016 Oct 21;221(8):435. Available from: <http://dx.doi.org/10.1038/sj.bdj.2016.748>
5. Adams D. Aesthetics in Dentistry: It’s More Than Beauty. *Dent Today* [Internet]. 2017 May;36(5):8. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/29231679>
6. Jagan BASKARADOSS | BDS, MPH, MJDF RCS Eng (UK), Cert. DPH (USA), ABDPH | Kuwait University, Kuwait City | KU | Department of Developmental and Preventive Sciences [Internet]. ResearchGate. 2020 [cited 2020 Jun 5]. Available from: https://www.researchgate.net/profile/Jagan_Baskaradoss
7. Heymann HO. The artistry of conservative esthetic dentistry. *J Am Dent Assoc* [Internet]. 1987 Dec;Spec No:14E – 23E. Available from: <http://dx.doi.org/10.14219/jada.archive.1987.0319>
8. Basha FYS, Ganapathy D, Venugopalan S. Oral Hygiene Status among Pregnant Women. *Research Journal of Pharmacy and Technology* [Internet]. 2018 Jul 31 [cited 2020 Jun 5];11(7):3099–102. Available from: <https://rjptonline.org/AbstractView.aspx?PID=2018-11-7-68>
9. Ajay R, Suma K, Ali SA, Kumar Sivakumar JS, Rakshagan V, Devaki V, et al. Effect of Surface Modifications on the Retention of Cement-retained Implant Crowns under Fatigue Loads: An In vitro Study. *J Pharm Bioallied Sci* [Internet]. 2017 Nov;9(Suppl 1):S154–60. Available from: http://dx.doi.org/10.4103/jpbs.JPBS_146_17
10. Duraisamy R, Krishnan CS, Ramasubramanian H, Sampathkumar J, Mariappan S, Navarasampatti Sivaprakasam A. Compatibility of Nonoriginal Abutments With Implants: Evaluation of Microgap at the Implant-Abutment Interface, With Original and Nonoriginal Abutments. *Implant Dent* [Internet]. 2019 Jun;28(3):289–95. Available from: <http://dx.doi.org/10.1097/ID.0000000000000885>
11. Ganapathy D, Sathyamoorthy A, Ranganathan H, Murthykumar K. Effect of Resin Bonded Luting Agents Influencing Marginal Discrepancy in All Ceramic Complete Veneer Crowns. *J Clin Diagn Res* [Internet]. 2016 Dec;10(12):ZC67–70. Available from: <http://dx.doi.org/10.7860/JCDR/2016/21447.9028>
12. Ranganathan H, Ganapathy DM, Jain AR. Cervical and Incisal Marginal Discrepancy in Ceramic Laminate Veneering Materials: A SEM Analysis. *Contemp Clin Dent* [Internet]. 2017 Apr;8(2):272–8. Available from: http://dx.doi.org/10.4103/ccd.ccd_156_17
13. Ashok V, Suvitha S. Awareness of all Ceramic Restoration in Rural Population. *Research Journal of Pharmacy and Technology* [Internet]. 2016 Oct 28 [cited 2020 Jun 5];9(10):1691–3. Available from: <http://rjptonline.org/HTMLPaper.aspx?Journal=Research%20Journal%20of%20Pharmacy%20and%20Technology;PID=2016-9-10-39>
14. Jain AR, Nallaswamy D, Ariga P. Determination of Correlation of Width of Maxillary Anterior Teeth with Extraoral Factor (Interpupillary Width) in Indian Population. *J Clin Diagn Res* [Internet]. 2019 Jul 1 [cited 2020 Jun 5];13(7). Available from: https://www.researchgate.net/publication/335397952_Determination_of_Correlation_of_Width_of_Maxillary_Anterior_Teeth_with_Extraoral_Factor_Interpupillary_Width_in_Indian_Population
15. Ashok V, Nallaswamy D, Benazir Begum S, Nesappan T. Lip Bumper Prosthesis for an Acromegaly Patient: A Clinical Report. *J Indian Prosthodont Soc* [Internet]. 2014 Dec;14(Suppl

- 1):279–82. Available from: <http://dx.doi.org/10.1007/s13191-013-0339-6>
16. Venugopalan S, Ariga P, Aggarwal P, Viswanath A. Magnetically retained silicone facial prosthesis. *Niger J Clin Pract* [Internet]. 2014 Mar;17(2):260–4. Available from: <http://dx.doi.org/10.4103/1119-3077.127575>
17. Selvan SR, Ganapathy D. Efficacy of Fifth Generation Cephalosporins against Methicillin-Resistant *Staphylococcus aureus*- A Review. *Research Journal of Pharmacy and Technology* [Internet]. 2016 Oct 28 [cited 2020 Jun 5];9(10):1815–8. Available from: <https://rjptonline.org/AbstractView.aspx?PID=2016-9-10-68>
18. Subasree S, Murthykumar K, Dhanraj. Effect of Aloe Vera in Oral Health – A Review. *Research Journal of Pharmacy and Technology* [Internet]. 2016 May 31 [cited 2020 Jun 5];9(5):609–12. Available from: <https://rjptonline.org/HTMLPaper.aspx?Journal=Research%20Journal%20of%20Pharmacy%20and%20Technology;PID=2016-9-5-28>
19. Vijayalakshmi B, Ganapathy D. Medical Management of Cellulitis. *Research Journal of Pharmacy and Technology* [Internet]. 2016 Nov 28 [cited 2020 Jun 5];9(11):2067–70. Available from: <https://rjptonline.org/AbstractView.aspx?PID=2016-9-11-51>
20. Ganapathy DM, Kannan A, Venugopalan S. Effect of Coated Surfaces influencing Screw Loosening in Implants: A Systematic Review and Meta-analysis. *World Journal of Dentistry* [Internet]. 2017 [cited 2020 Jun 5];8(6):496–502. Available from: <https://www.wjoud.com/doi/10.5005/jp-journals-10015-1493>
21. Kannan A, Venugopalan S. A Systematic Review on the Effect of Use of Impregnated Retraction Cords on Gingiva. *Research Journal of Pharmacy and Technology* [Internet]. 2018 May 30 [cited 2020 Jun 5];11(5):2121–6. Available from: <https://rjptonline.org/AbstractView.aspx?PID=2018-11-5-78>
22. Manipal S, Mohan CSA, Kumar DL, Cholan PK, Ahmed A, Adusumilli P. The importance of dental aesthetics among dental students assessment of knowledge. *J Int Soc Prev Community Dent* [Internet]. 2014 Jan;4(1):48–51. Available from: <http://dx.doi.org/10.4103/2231-0762.131266>
23. Hamamci N, Başaran G, Uysal E. Dental Aesthetic Index scores and perception of personal dental appearance among Turkish university students. *Eur J Orthod* [Internet]. 2009 Apr;31(2):168–73. Available from: <http://dx.doi.org/10.1093/ejo/cjn083>
24. Onyeaso CO, Sanu OO. Perception of personal dental appearance in Nigerian adolescents. *Am J Orthod Dentofacial Orthop* [Internet]. 2005 Jun;127(6):700–6. Available from: <http://dx.doi.org/10.1016/j.ajodo.2003.12.028>