



REVIEW ARTICLE

Conservative esthetic dentistry in Riyadh – Saudi Arabia

Minas M. Ali^{1*}, Farah H. Alenezi², Nora F. Alfayyadh³, Sara Y. Alhassoun⁴, Rahaf M. Alanzi⁵, Waseem Radwan⁶

Abstract

This manuscript is directed to assess patient awareness towards esthetic conservative dentistry. Raising the awareness of the community on preserving their overall dental health is the duty of all dental practitioners. Hence, there is a need for self-assessment amongst the population about when to seek esthetic treatment, whether it's necessary, and most importantly, the treatment options available in the market is a crucial aspect. Not many studies have taken this into consideration. Therefore, this manuscript will contribute to increasing people's awareness of esthetic conservative dentistry.

Method: A cross-sectional study with a sample size of (n = 533) of any gender and age, excluding patients with mental illness or taking mental disorder medications, was conducted within Riyadh province, Kingdom of Saudi Arabia (KSA). A closed-ended standard questionnaire was conducted; data from the completed questionnaires was entered into the SPSS version 25 (SPSS - IBM, Armonk, NY) statistical software to obtain descriptive as well as associative statistics.

Results: Many people considered in the study showed outstanding results. All age groups show the highest significance related to the questioned items. On the other hand, other associative factors such as education level and salary also played an important role in showing the significance in relation to the items, we were curious to know about.

Conclusion: People were not aware of the name conservative dentistry, though they were aware of many conservative modalities for treating different types of cases. It was also visible how well aware the study population was to obtain knowledge about available treatment options and when to perform the suitable procedure chosen by both the dentist and, most importantly, themselves.

Keywords: Patient awareness, Conservative dentistry, Esthetic treatment, Minimal invasive dentistry.

Introduction

Smile makeovers have been in the spotlight for the past years. Many people seek esthetic treatments to achieve attractive smiles in order to improve their self-esteem, self-image and self-confidence (Smielak B., 2015). Nowadays, due to many advertisements and the influence of social media, many people have been directed to request higher esthetic outcomes. Moreover, people are also deceived by

the thought of having few treatment options available to achieve a result that meets their high esthetic expectations. This is mainly seen in patients with compromised esthetic appearance due to teeth discoloration, diastemas, different types of anterior teeth trauma or other causes. Hence, they are willing to undergo any treatment that will enhance their appearance and make them feel more satisfied and confident, regardless of the technique used to improve their esthetic situation. Since conservative approaches are the new era of dentistry (Oliveira DC., 2011), clinicians are available to correct these misleading influences of society so that patients are well aware of various treatment options available. Clinicians have been using new materials and techniques to reduce or eliminate tooth preparations (Boere IA et al., 2006), especially the enamel, to improve tooth color and shape. The enamel is the protective layer of the tooth that lacks the ability to form new enamel (Meyer E., 2012, Bayne SC, 2019). Therefore, minimal intervention (MI) can now achieve major adjustments (Rosenberg JM., 2009). The concept of preserving the tooth structure is an approach to be known as 'minimally invasive dentistry' (MID) (Weisrock G, et al., 2011). The philosophy of conservative dentistry treatment is part of the initial premise behind the proposed protocols for esthetic dentistry brought forth in the early

¹General Dentist, Qatar

²General Dentist, Kuwait

^{3,4,5}General Dentist, Kingdom of Saudi Arabia

⁶Department of Restorative Dentistry, BDS, Riyadh Elm University, Riyadh, Kingdom of Saudi Arabia

*Corresponding Author: Minas M. Ali, General dentist, Qatar, E-Mail: minasali96@hotmail.com

How to cite this article: Ali, M.M., Alenezi, F.H., Alfayyadh, N.F., Alhassoun, S.Y., Alanzi, R.M., Radwan, W., (2023). Conservative esthetic dentistry in Riyadh – Saudi Arabia. *The Scientific Temper*, 14(3): 967-974.

Doi: 10.58414/SCIENTIFICTEMPER.2023.14.3.63

Source of support: Nil

Conflict of interest: None.

1980s, as it was mentioned by Dr. Sesemanm (Meyer E., 2012). There are many options in hand such as, bleaching, orthodontic appliances, restorative dentistry reaching to partial veneers and keeping veneers or full coverage crowns as the last option, since they are the least preservative procedures to a tooth structure. Eventually, to achieve the highest implementation of such a conservative concept and approach, patients' awareness should be considered with the different modalities of treatment.

From a historical point of view, Dr. G.V. Black was the first dentist to design the cavity preparation principles in caries treatment (Oliveira DC., 2011), to gain the maximum benefit of the restoration materials available at that time. However, these principles are not essential in this current era because of the noticeable advancement in both materials and techniques. Hence, there is no longer a need for "extension for prevention". As was evident by numerous studies before, tooth caries is considered the most common childhood disease. On the other hand, a significant proportion of adults have experienced dental caries, which is assumed to be a substantial health issue and the main cause of dental loss in the geriatric population. In addition, carious lesions are seen to be the main reason behind a lot of dental procedures (Oliveira DC., 2011), starting with simple restorations, propagating to endodontic treatments or dental extraction, and ending up with the replacement of the missing tooth. For this purpose, clinicians need to know enough about the carious process and the different available technologies that aim to detect carious lesions in their initial stages. This will aid the process of restricting and determining the proper time for treatment. Accordingly, the treatment should start as soon as possible to undergo an MI therapeutic technique (Molina IC, *et al.*, 2019). For this to be implemented, it is very important to understand the concept very well, based on careful treatment planning and preserving the tooth structure as much as possible (Sundfeld RH, *et al.*, 2014). Treatment is not the main issue than reaching the highest level of patient satisfaction. This is because esthetics is still the primary concern for patients, especially young people, regardless of anything else, which is a challenging goal for dentists (Pereira LM *et al.*, 2017). Patient satisfaction won't be reachable without considering the patient's expectations before, during and after the treatment. This can be easier when the dentist enhances the natural appearance of the tooth via MID techniques (Prieto LT *et al.*, 2014), in both aspects of intervention techniques and quantity. Patient involvement in the decision-making process is highly recommended. It's more important to involve the patient in the process of decision-making and not ignore their will and preferences. Another important factor to be considered is the cost. It's a very important factor that may direct the patient towards their treatment decision. The dentist must consider this factor as it could be a limitation during the

stage of treatment planning and decision-making. Direct composite restoration is an excellent treatment option for both dentist and patient, which is frequently easy to place, replace and, most importantly, financially reasonable (Pini NIP *et al.*, 2015). Another conservative treatment option is macro and micro abrasion in cases of teeth with fluorosis, as they are assessed according to their cause and depth (Farias-Neto A, *et al.*, 2015). Their assessment is important to ensure the success of such treatment. They are highly successful in superficial stains hence otherwise, they are ruled out and other options are considered. For instance, there are treatments such as the restorative approach, both direct or indirect composite restorations, ceramic veneer, or all ceramic crowns, depending on the severity and extent of the defects (Farias-Neto A, *et al.*, 2015). When it comes to veneers, we must bear in mind the advantage of maximum preservation of tooth structure concept, known as the partial non-prep porcelain laminate veneer (PLV) concept. In contrast, its main disadvantage is that it may lead to gingival irritation due to the over-contoured transition zone. So the partial prep veneers are safe restorative option that can mimic the natural appearance when doing the preparation at the marginal zone in a minimally invasive way (Sundfeld RH, *et al.*, 2014). As the patient's concern is important, we should accept his/her opinion when deciding not to drill or remove any part of the tooth (Tucker MC, 2017). Focusing on what we mentioned before about the importance of early detection of carious lesions, it will help the dentist to achieve the real (MID) implementation. This is done using the technique known as "infiltration" of carious lesions using low-viscosity light-curing resin. Infiltration will help in inhibiting further demineralization of the caries lesion, with no need for local anesthesia administration or drilling to preserve tooth's anatomical shape. Thereby enhancing natural tooth appearance. Eventually, high level of patient satisfaction will be reached (Molina IC, *et al.*, 2019). In conclusion, it's the dentist's role to increase awareness amongst the community. Therefore, it is highly recommended to enhance patient awareness towards self -assessment, which includes when to seek esthetic treatment, when it is necessary, what treatment options are available and finally, which treatment suits them best. Not many studies have considered this, and this research will contribute to the knowledge about people's awareness of esthetic conservative dentistry.

Objectives

Due to lack of previous research in this area, this research will investigate the patient's awareness toward esthetic conservative dentistry, MID, their influence upon deciding to undergo change in their appearance, and the available options in deciding their treatment. Are patients aware of MID, its different treatment modalities, and the current available updated treatment options?

Methods

Research Participants

A cross-sectional study was conducted in a Sample size of (n=533), we distributed our survey to the population of both genders with different age groups. The exclusion criteria was patients with any mental illness or under any mental disorder medications. We restricted the study (distribution of the survey) in Riyadh province, KSA.

Sampling Technique

A non-probability sampling technique was employed to collect the data from the participants. We complied with the ethical requirements as stated in the Declaration of Helsinki of scientific research. Accordingly, our research topic has been reviewed by the Institutional Review Board (IRB) at Riyadh Elm University (REU) and approved with the IRB approval number RC / IRB / 2019 / 273.

Survey Design

An online survey using google form was performed, aiming to assess the knowledge of Riyadh population about conservative dentistry and the different treatment modalities for different cases. Close-ended questions were used in both Arabic and English in a period of two weeks. After the language choice question, we started our survey with four demographic questions (to assess the structure of the participating population) (Table 1-4). These include gender: male or female, age which was subdivided into four categories: below 20 years, 21 to 30 years, 31 to 50 years or above 50 years. Educational level was also required, it was divided into 3 levels; primary – middle school, high school-diploma or bachelor – postgraduate studies. Finally, their Saudi Arabian Riyals (SAR) income was also to be considered, divided into four categories: 1,000–5,000, 6,000–10,000, 11,000–15,000 or 16,000 and above. Then we asked whether they knew what conservative dentistry was and if yes which of the following was considered to be the treatment of choice; micro abrasion, dental bleaching, composite resins or veneers. Secondly, if they have performed any esthetic treatment including bleaching, microabrasion, or veneers previously. In addition, the survey questioned whether esthetic treatment is related to an age group. The following questions discussed how people get their information about a specific treatment; either from a dentist or are they influenced by the society or social media platforms. The second part of the questions included images of some cases including yellow discolorations Figure 1 Yellow discoloration (Boere and Hoskam, 2006), diastema; small spacing between the anterior teeth small gap (“Diastema before direct bonding,” n.d.), chipped tooth (small broken part of a tooth) chipped tooth (TUCKER, 2017). We were also interested in knowing what was their point of interest when deciding to undergo an esthetic treatment. Moreover, their knowledge about the use of composite restorations and crowns, used for esthetics only or therapeutic only

or a combination of both. Finally, the survey questioned if there was a relationship between the cost and the treatment durability.

Statistical Analysis

All the data was entered into the SPSS version 25 (SPSS-IBM, Armonk, NY), and analyzed. Descriptive as well as associative statistics of frequency distribution and percentages were calculated for the demographic variables and questionnaire items. The chi-square test was applied for categorical variables to assess the associations. A chi-square test produces the p-value, which implies whether test results are significant or not. Any P value of less than (p < 0.05) was considered significant for all statistical purposes.

Results

This survey exhibited significant p values that tell us more about the population’s true knowledge of conservative esthetic treatments. 70.9% answered they have never heard about conservative dentistry nor had they ever performed any esthetic treatment before. On the other hand, an important association was evident amongst all participants’ salary ranges and age groups to provide

Table 1: Demographic variables of the study participants

Demographic variables		n	%
Gender	Female	459	86.3 %
	Male	73	13.7 %
	Total	532	100.0 %
Age in years	Below 20	67	12.6 %
	21 to 30	164	30.8 %
	31 to 50	191	35.9 %
	Above 50	110	20.7 %
	Total	532	100.0 %
Educational level	Primary – middle school	13	2.4 %
	High school- diploma	115	21.6 %
	Bachelor – postgraduate studies	404	75.9 %
	Total	532	100.0 %
Salary	1,000 – 5,000	225	42.3 %
	6,000 – 10,000	105	19.7 %
	11,000 – 15,000	110	20.7 %
	16,000 and above	92	17.3 %
	Total	532	100.0 %

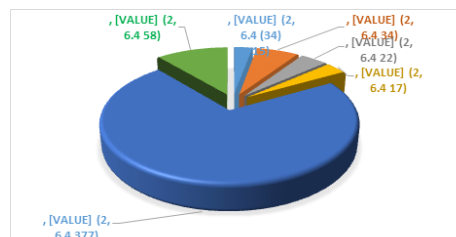


Figure 1: Heard of esthetic conservative dentistry

Table 2: Distribution of the responses to the items Q2-14

<i>Items</i>	<i>Responses</i>	<i>n</i>	<i>%</i>	
Q2	Have you ever tried esthetic treatment such as :(teeth whitening / veneers/ micro abrasion) before	Yes	155	29.1
		No	377	70.9
		Children	3	0.6
Q3	Which age group can undergo esthetic dental treatment	Teenagers/Young adults	199	37.4
		Old adults	49	9.2
		All of the above	281	52.8
		Keeping up with the society	181	34.0
Q4	What is people's best motive for esthetic treatment?	Offers and suitable prices	23	4.3
		Presence of true dental problem	304	57.1
		I do not know	24	4.5
		Friends/relatives	88	16.5
Q5	To whom do you get your information when deciding to have esthetic dental treatment?	Dentist consultation	397	74.6
		Advertisements	14	2.6
		Not interested	33	6.2
		Dentist advice	312	58.6
Q6	What affects the patient treatment decision?	Price suitability	78	14.7
		Personal decision	99	18.6
		Spouse/relative opinion	43	8.1
		How will the result look like	212	39.8
Q7	What's most important for you to know when deciding to have esthetic treatment?	Type of esthetic treatment to be done	102	19.2
		How to prolong the results	143	26.9
		Treatment options available	65	12.2
		Not interested	10	1.9
		Teeth cleaning and polishing	323	60.7
Q8	What's the best treatment in case of simple teeth discoloration (example: coffee stains)?	Micro/macro abrasion	18	3.4
		Veneers	8	1.5
		Teeth whitening	183	34.4
		Veneer	11	2.1
Q9	When a small gap between the front teeth is present, what is the most appropriate treatment?	Tooth colour restoration	136	25.6
		Braces	271	50.9
		I don't know	114	21.4
		Full crown	65	12.2
Q10	Best way to restore a tiny broken piece of a tooth?	Partial crown	226	42.5
		Tooth colour restoration	241	45.3
Q11	Is it correct to place veneers (Hollywood smile) while having infected gums?	Not true	374	70.3
		True	6	1.1
		I don't know	152	28.6
		Esthetic	36	6.8
Q12	What are the uses of composite (tooth-colour) restoration and artificial crowns/veneers?	Therapeutic	22	4.1
		Both esthetic and therapeutic	408	76.7
		I don't know	66	12.4
Q13	Is there a relationship between treatment durability and treatment cost?	High cost = long durability	113	21.2
		Low cost = short durability	23	4.3
		No correlation	396	74.4
Q14	Do you think difficulty of the treatment increases as the time of the proposed treatment is postponed?	Agree	430	80.8
		Disagree	24	4.5
		I don't know	78	14.7

Table 3: Association between questionnaire item responses of items Q2-14 and gender and age of the study participants

Items	Responses	Gender		p	Age				p
		Female (%)	Male (%)		< 20 (%)	21-30 (%)	31-50 (%)	> 50 (%)	
Q2	Yes	30.30	21.90	0.144	17.90	33.50	28.80	30.00	0.128
	No	69.70	78.10		82.10	66.50	71.20	70.00	
Q3	Children	0.40	1.40	0.092	0.00	0.00	0.00	2.70	0.044
	Teenagers / Young adults	38.10	32.90		47.80	35.40	34.60	39.10	
	Old adults	8.10	16.40		9.00	10.40	7.90	10.00	
	All of the above	53.40	49.30		43.30	54.30	57.60	48.20	
Q4	Keeping up with the society	34.00	34.20	0.959	32.80	37.20	34.60	29.10	0.030
	Offers and suitable prices	4.10	5.50		7.50	7.30	2.60	0.90	
	Presence of true dental problem	57.30	56.20		50.70	51.80	60.20	63.60	
Q5	I do not know	4.60	4.10	0.739	9.00	3.70	2.60	6.40	0.555
	Friends / relatives	16.10	19.20		11.90	19.50	17.30	13.60	
	Dentist consultation	75.20	71.20		79.10	74.40	74.30	72.70	
	Advertisements	2.40	4.10		3.00	1.20	3.10	3.60	
Q6	Not interested	6.30	5.50	0.871	6.00	4.90	5.20	10.00	0.078
	Dentist advice	58.20	61.60		62.70	49.40	59.70	68.20	
	Price suitability	14.60	15.10		13.40	20.70	14.10	7.30	
	Personal decision	19.20	15.10		13.40	22.00	18.80	16.40	
Q7	Spouse / relative opinion	8.10	8.20	0.115	10.40	7.90	7.30	8.20	0.905
	How will the result look like	39.90	39.70		38.80	37.80	43.50	37.30	
	Type of esthetic treatment to be done	19.60	16.40		19.40	21.30	16.20	20.90	
	How to prolong the results	25.70	34.20		29.90	26.80	24.60	29.10	
Q8	Treatment options available	13.30	5.50	0.050	9.00	12.80	14.10	10.00	0.201
	Not interested	1.50	4.10		3.00	1.20	1.60	2.70	
	Teeth cleaning and polishing	59.50	68.50		58.20	53.70	63.90	67.30	
	Micro / macro abrasion	3.30	4.10		7.50	3.00	2.10	3.60	
Q9	Veneers	1.10	4.10	.242	0.00	1.80	1.60	1.80	.000
	Teeth whitening	36.20	23.30		34.30	41.50	32.50	27.30	
	Veneer	2.0	2.7		0.0	2.4	2.6	1.8	
	Tooth colour restoration	25.9	23.3		16.4	29.9	26.2	23.6	
Q10	Braces	52.1	43.8	.262	77.6	51.2	45.5	43.6	.725
	I don't know	20.0	30.1		6.0	16.5	25.7	30.9	
	Full crown	12.9 %	8.2 %		16.4	9.8	11.5	14.5	
	Partial crown	43.1 %	38.4 %		43.3	40.9	44.0	41.8	
Q11	Tooth color restoration	44.0 %	53.4 %	.017	40.3	49.4	44.5	43.6	.000
	Not true	72.5 %	56.2 %		62.7	82.9	67.0	61.8	
	True	1.1 %	1.4 %		4.5	0.6	0.5	0.9	
Q12	I don't know	26.4 %	42.5 %	.429	32.8	16.5	32.5	37.3 %	.497
	Esthetic	6.5 %	8.2 %		7.5 %	7.3 %	6.3 %	6.4	
	therapeutic	4.1	4.1		7.5	4.3	3.1	3.6	
	Both esthetic and therapeutic	77.8	69.9		65.7	76.8	77.5	81.8	
Q13	I don't know	11.5	17.8	.000	19.4	11.6	13.1	8.2	.000
	High cost = long durability	20.9	23.3		37.3	17.7	22.5	14.5	
	Low cost = short durability	2.6	15.1		10.4	6.1	2.1	1.8	
Q14	No correlation	76.5	61.6	.080	52.2	76.2	75.4	83.6	.688
	Agree	80.4	83.6		77.6	82.3	78.0	85.5	
	Disagree	3.9	8.2		6.0	3.7	4.7	4.5	
	I don't know	15.7	8.2		16.4	14.0	17.3	10.0	

Table 4: Association between questionnaire item responses of items q2-q8 and educational level and salary of the study participants

Items	Educational Level			Salary				<i>p</i>		
	Primary – Middle School (%)	High School-Diploma (%)	Bachelor – Postgraduate Studies (%)	<i>p</i>	1,000 – 5,000 (%)	6,000 – 10,000 (%)	11,000 – 15,000 (%)		>16,000 (%)	
Q2	Yes	23.1	32.2	28.5	0.659	24.4	29.5	34.5	33.7	0.180
	No	76.9	67.8	71.5		75.6	70.5	65.5	66.3	
	Children	0.0	0.0	0.7		0.0	0.0	0.9	2.2	
Q3	Teenagers/ Young adults	46.2	40.0	36.4	0.709	39.1	39.0	44.5	22.8	0.005
	Old adults	0.0	7.0	10.1		6.7	6.7	10.9	16.3	
	All of the above	53.8	53.0	52.7		54.2	54.3	43.6	58.7	
	Keeping up with the society	15.4	37.4	33.7		30.7	41.9	41.8	23.9	
Q4	Offers and suitable prices	0.0	4.3	4.5	0.436	6.2	2.9	1.8	4.3	0.085
	Presence of true dental problem	76.9	56.5	56.7		58.2	52.4	50.9	67.4	
	I do not know	7.7	1.7	5.2		4.9	2.9	5.5	4.3	
	Friends / relatives	23.1	24.3	14.1		16.0	20.0	15.5	15.2	
Q5	Dentist consultation	61.5	68.7	76.7	0.086	74.2	71.4	75.5	78.3	0.929
	Advertisements	0.0	3.5	2.5		3.1	1.9	1.8	3.3	
	Not interested	15.4	3.5	6.7		6.7	6.7	7.3	3.3	
	Dentist advice	38.5	63.5	57.9		54.7	57.1	63.6	64.1	
Q6	Price suitability	15.4	9.6	16.1	0.236	18.2	15.2	8.2	13.0	0.107
	Personal decision	38.5	16.5	18.6		20.9	17.1	15.5	18.5	
	Spouse/ relative opinion	7.7	10.4	7.4		6.2	10.5	12.7	4.3	
	How will the result look like	23.1	40.9	40.1		40.9	37.1	40.0	40.2	
Q7	Type of esthetic treatment to be done	15.4	12.2	21.3	0.031	19.6	13.3	22.7	20.7	0.805
	How to prolong the results	30.8	33.0	25.0		25.8	35.2	23.6	23.9	
	Treatment options available	23.1	9.6	12.6		12.0	11.4	11.8	14.1	
	Not interested	7.7	4.3	1.0		1.8	2.9	1.8	1.1	
	Teeth cleaning and polishing	69.2	60.0	60.6		62.2	50.5	66.4	62.0	
Q8	Micro/macro abrasion	7.7	7.0	2.2	0.222	3.6	4.8	2.7	2.2	0.065
	Veneers	0.0	0.9	1.7		0.0	2.9	0.9	4.3	
	Teeth whitening	23.1	32.2	35.4		34.2	41.9	30.0	31.5	
	Veneer	0.0	0.0	2.7		0.9	4.8	1.8	2.2	
Q9	Tooth color restoration	30.8	20.0	27.0	.178	28.4	20.0	25.5	25.0	.137
	Braces	61.5	59.1	48.3		54.2	52.4	45.5	47.8	
	I don't know	7.7	20.9	22.0		16.4	22.9	27.3	25.0	
	Full crown	0.0	12.2	12.6		9.8	16.2	14.5	10.9	
Q10	Partial crown	46.2	35.7	44.3	.276	40.9	40.0	46.4	44.6	.463
	Tooth color restoration	53.8	52.2	43.1		49.3	43.8	39.1	44.6	
	Not true	53.8	63.5	72.8		71.6	67.6	71.8	68.5	
Q11	True	0.0	0.9	1.2	.182	1.3	1.9	0.9	0.0	.855
	I don't know	46.2	35.7	26.0		27.1	30.5	27.3	31.5	
	Esthetic	0.0	10.4	5.9		5.3	1.9	13.6	7.6	
Q12	Therapeutic	0.0	2.6	4.7	.045	4.4	3.8	4.5	3.3	.016
	Both esthetic and therapeutic	61.5	74.8	77.7		73.3	84.8	73.6	79.3	
	I don't know	38.5	12.2	11.6		16.9	9.5	8.2	9.8	
	High cost = long durability	7.7	15.7	23.3		20.9	22.9	16.4	26.1	
Q13	Low cost = short durability	0.0	7.0	3.7	.128	5.3	1.0	1.8	8.7	.039
	No correlation	92.3	77.4	73.0		73.8	76.2	81.8	65.2	
	Agree	69.2	75.7	82.7		79.6	76.2	83.6	85.9	
Q14	Disagree	15.4	3.5	4.5	.079	5.3	6.7	2.7	2.2	.539
	I don't know	15.4	20.9	12.9		15.1	17.1	13.6	12.0	

esthetic treatment to any person regardless of age. Another important information was the presence of a true dental problem to perform conservative esthetic treatment. Yet, it is shown that there was no significant value for the factors affecting their choice of treatment and to whom they would get information when deciding to perform an esthetic treatment. Moving on to the result of treatment, a significant association was seen amongst high school diploma and bachelor-postgraduate studies groups with how the results would look like. Meanwhile, the primary-middle school genders had exceptional association regarding having no relationship between treatment cost and its durability.

Discussion

According to the survey 70.9% of people have never heard about conservative dentistry and had not undergone any esthetic treatment before. This raises the importance of this study in order to pay future efforts to spread knowledge in an effective way. There is a lack of research in this area. So, this study surveyed different aspects to see how nourished the community is. Most of the participants showed outstanding results that was evident in their responses to different aspects questioned. The participants of all age groups and salary categories considered in the study answered that any person of any age could seek esthetic dental treatment. They were also motivated to seek esthetic treatment only if there was a true dental problem. In addition, both genders considered teeth cleaning and polishing is the best treatment for yellow discoloration of teeth. Additionally, most of the participants showed striking results when braces were chosen as the best way to treat a small gap/space between anterior teeth rather than other options. Now the question about the actual understanding of orthodontic treatment by the community has emerged: how much do people know? Meanwhile, the results showed there was an association uniting all age groups and genders for not placing veneers while having infected gums. Moreover, educational level and salary categories enlisted in the study were associatively linked with choosing composite and artificial crowns for therapeutic and esthetic purposes. Similarly, most people considered that there is no relation between treatment durability and treatment cost which was also eye-catching. Finally, all these results revealed good implications of the participants' awareness but not enough. This study opens many investigation fields about how much the community knows.

Conclusion

This study surveyed the participants' awareness of conservative dentistry and MID modalities using various questions in Riyadh, KSA. Reviewing the participants' opinions and experiences in esthetic conservative dentistry and MID combined with the results showed that they lacked what exactly conservative dentistry is. Alongside, most of them did not receive any kind of esthetic treatment, evident in all age

groups and genders considered in the study. On the other hand, more than half of the participants were motivated to seek an esthetic treatment only when there was a true dental problem. In addition to many responses to simple cases given within the survey, it helped achieve promising results. In conclusion, participants reflected positive responses towards MI procedures at hand before pursuing any non-conservative procedure. Hence, this draws attention to the importance of the dental practitioner's role and opinion in counseling the patient's decision of which modality to perform.

Moreover, this indicates the significance of further efforts towards raising the level of awareness in the community towards esthetic conservative dentistry and its vast modalities.

References

- Smielak, B. (2015). " No-preparation" and Minimally Invasive Veneers in Clinical Practice: Part 1. *Smile Dental Journal*, 10(1).
- Oliveira, D. C. (2011). Minimally invasive dentistry approach in dental public health (Doctoral dissertation, The University of Iowa).
- Boere, I. A., & Hoskam, J. A. M. (2006). yellow discoloration. *Neth J Med*, 64, 56-57.
- Bakeman, E. M., Goldstein, R. E., & Sesemann, M. R. (2015). Patients' best interests at the heart of conservative esthetic dentistry. *Compendium of continuing education in dentistry* (Jamesburg, NJ: 1995), 36(1), 10-11.
- Meyer E. (2012). Cosmetic dentistry turns right. *Inside Dentistry* ;8(6). <https://www.aegisdentalnetwork.com/id/2012/06/cosmetic-dentistry-turns-right>
- Bayne, S. C., Ferracane, J. L., Marshall, G. W., Marshall, S. J., & Van Noort, R. (2019). The evolution of dental materials over the past century: silver and gold to tooth color and beyond. *Journal of dental research*, 98(3), 257-265.
- Rosenberg JM. (2009). Modern restorative dentistry: anterior application. *Inside Dentistry*, 5(10). <https://www.aegisdentalnetwork.com/id/2009/12/new-restorative-protocol-uses-adhesive-bonding-resins-to-restore-form-and-function>
- Weisrock, G., Terrer, E., Couderc, G., Koubi, S., Levallois, B., Manton, D., & Tassery, H. (2011). Naturally aesthetic restorations and minimally invasive dentistry. *Journal of Minimum Intervention in Dentistry*, 4(2), 23-34
- Contreras Molina, I., Contreras Molina, G., Stanley, K., Lago, C., Ferreira Xavier, C., & Maziero Volpato, C. A. (2016). Partial-prep bonded restorations in the anterior dentition: Long-term gingival health and predictability. *A case report. Quintessence International*, 47(1).
- Sundfeld, R. H., Sundfeld-Neto, D., Machado, L. S., Franco, L. M., Fagundes, T. C., & Briso, A. L. F. (2014). Microabrasion in tooth enamel discoloration defects: three cases with long-term follow-ups. *Journal of Applied Oral Science*, 22, 347-354.
- Pereira, L. M., Tavares, L. N., Maruki, A. Y., Prudente, M. S., & Raposo, L. H. (2017). Esthetic rehabilitation of smile with minimally invasive preparations and thin laminate ceramic veneers using chairside CAD/CAM system. *J Dent Health Oral Disord Ther*, 8(1), 00267.
- Prieto, L. T., Araujo, C. T., De Oliveira, D. C., de Azevedo Vaz, S. L., D'Arce, M. B., & Paulillo, L. A. (2014). Minimally invasive

- cosmetic dentistry: smile reconstruction using direct resin bonding. *Gen Dent*, 62(1), 28-31.
- Pini, N. I. P., Sundfeld-Neto, D., Aguiar, F. H. B., Sundfeld, R. H., Martins, L. R. M., Lovadino, J. R., & Lima, D. A. N. L. (2015). Enamel microabrasion: An overview of clinical and scientific considerations. *World Journal of Clinical Cases: WJCC*, 3(1), 34.
- Farias-Neto, A., Gomes, E. M. D. C. F., Sánchez-Ayala, A., Sánchez-Ayala, A., & Vilanova, L. S. R. (2015). Esthetic rehabilitation of the smile with no-prep porcelain laminates and partial veneers. *Case reports in dentistry*, 2015.
- TUCKER, M. C., & Collins, B. (2009). Chipped Tooth. In J. Smith (Ed.), *Don't Leave Hungry: Fifty Years of Southern Poetry Review* (pp. 129–129). University of Arkansas Press. <https://doi.org/10.2307/j.ctt1ffjgnb.97w>