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# ARTICLEINFO



Keywords: Dental veneers, Awareness, Knowledge

#### ABSTRACT

Aim

The aim of this study was to evaluate the knowledge and awareness on a convenience sample of Riyadh city, Kingdom of Saudi Arabia (KSA) population toward dental veneers.

#### Materials and Methods

A cross-sectional survey in both English and Arabic languages was distributed among the population of Riyadh city by social media. The questionnaire consisted of 21 questions. The questionnaire were divided into three sections, first section asked about the participants personal information, second section about the general knowledge of dental veneers, and lastly the third section from where they have obtained their information from. The sample included Saudi and non-Saudi who were over 18 years of age. All the data was analyzed by using statistical analysis software (IBM-SPSS version 25, Armonk, NY: USA). Results

Of the total 1031 participants, most of them are Saudis (92.1%) and females (82.4%). Most of the participants (53.9%) reported that ceramic veneers are costlier than composite. Regarding the oral hygiene, most of respondents (77.9%) agreed that veneers need higher maintaining than natural teeth. The results showed that the majority of respondents didn't know about the difference between direct and indirect veneers and agreed that some kind of veneers doesn't require any preparation. Approximately one-third (36.6%) gained their source of information about dental veneers from social media while (33.0%) from family and friends.

Conclusions

Based on the result, the awareness regarding veneers is moderate and they also lack in the source of information. It is recommended to encourage dentists to share appropriate information regarding dental health and dental procedures.

## INTRODUCTION

In the 21st century, the patients' aesthetic expectations are highly increased and lately influenced by the growing accessibility of media and online information. popular media affect aesthetic dentistry by increasing the demand for veneers due to the influence of television programs.1 According to a study, around half of the patient are believed to be dissatisfied with the appearance of the teeth.2 The dental veneers are used to mask tooth discolorations with minimal or no tooth preparation and to correct unaesthetic tooth shape, shade, and positions.3 There are two types of dental veneers, direct composite veneer and indirect ceramic veneer.4 Some important aspects such as tooth preparation, cementation technique, shade selection, and patient maintenance need to be considered as factors for the long-term success of ceramic veneer. Nevertheless, the need of porcelain veneer placement required tooth preparation that will lead to irreversible damage. The composite restorations

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yet suffer from a limited durability, still remain liable to discoloration, marginal fractures, and wear. Hence, aesthetic results in the long term will be decreased. On the other hand, the composite veneers do not require excessive preparations.5 According to a study, population knowledge about using ceramic laminate veneers in Saudi Arabia was unsatisfactory.6 The aim of this study was to evaluate the knowledge and awareness on a convenience sample of Riyadh city, Kingdom of Saudi Arabia (KSA) population toward dental veneers.

#### **Methods**

A cross-sectional study was conducted in Riyadh city, KSA on February 2020, by collecting date through esurvey google forms on a convenience sample of Riyadh city population with a sample power of 0.90. IRB approval was obtained from the research center of Rivadh Elm University. The questionnaire was designed both in Arabic and English and composed of 21 items divided into three major categories, starting with demographics such as age, gender, and nationality; questions related to the topic in hand; and finally from where they have gained the information (if they depend on social media to gain information or their dentist). The sample included both Saudi and non-Saudi who were over 18 years of age. The questionnaire was distributed together with an explanatory letter requesting participation and ensuring confidentiality and anonymity. Descriptive statistics of frequency distribution and percentages were calculated for all the demographic variables and questionnaire items. Relationship between the demographic variables and questionnaire items were assessed by applying Chi Square test. A value of p≤0.05 was considered significant for all statistical purposes. All the data was analyzed by using statistical package for social sciences (IBM-SPSS version 25, Armonk, NY: USA).

## **Results**

Of the total 1031 respondents, most of them are Saudis (92.1%) (Figure 1). According to gender, most of the respondents were females (82.4%) (Figure 2). The majority of participants were between 18-25 years of age (37.7%), followed by 40 years and above (26.5%) (Figure 3). The questionnaire was completed mainly by participants who had a bachelor's degree (67.9%) (Figure 4).

Tables 1, 2, and 3 shows the comparison mean score % of correct responses for knowledge regarding dental veneers in relation to the characteristics of the participants. The response to the question on what kind of veneers do you prefer, the majority of the participants said "I don't know" (65.4%, n=672). The results showed that 37.4% (n=385) of the participants did not know the longevity of veneers, while 33.3% (n=343) choose 7-5 years, 18.4% (n=189) choose 8-15 years, and 10.9% (n=112) believed the veneer will stay life-long. The majority of participants preferred both patients and the dentist select the shade of the veneers (70.4%, n=725). Most of the respondents (85.3% n=877) preferred to do their veneers with a specialist. The majority of the respondents agreed that dental veneers takes more than 2 visits (72.8% n=749). The results vary when asked them about the cost of each type of veneers (composite and ceramics), 53.9% (n=554) believed that ceramic veneers are costlier than composite while 25% (n=257) think they are all same cost and (21% n=216) think that composite veneers has higher cost.

Regarding the oral hygiene, most of respondents agreed that with dental veneers there is a higher need for maintaining a good oral hygiene than natural teeth (77.9% n=802). The majority (80.9% n=832) "disagree" to do root canal treatment for all teeth needed to be

veneered (Table 4). Most of people were aware that it is contraindicated to apply veneers on a decayed teeth with (94.5% n=971). Some of respondents were aware about different anatomy of each tooth. The results showed that the majority of respondents didn't know about the difference between direct and indirect veneers (66.5% n=682) while 33.5% (n=344) were aware of the difference between them. Approximately half (52.7% n=541) of respondents agreed that some kind of veneers doesn't require any preparation. The majority of the respondents agreed that they should check up their teeth periodically after applying veneer (77.2% n=792).

Most of the respondents reported that veneers could be distorted with time (89% n=912) (Table 5). The majority (86% n=882) of respondents didn't believe in ads that are seen in social media platforms (Figure 5). The responses to the question which was concerned about choosing dentists through his/her social media accounts before the first visit, around half the respondents reported "no" (50.8% n=521) (Figure 6). The results showed that 36.6% (n=376) gained their source of information about dental veneers from social media while 33% (n=339) from family and friends, 19.4% (n=199) obtained their source of information from dentists, and 10.9% (n=112) from books and articles (Figure 7).

#### **Discussion**

With the number of channels available for our society to gain knowledge about many topics of interest, our goal was to explore society's knowledge about dental veneers, ceramics, and composites. The results will help us attain which part needs raising of awareness. Currently, the source of information for the Saudi society regarding laminate veneers are social media, family and friends.7

The sample of this study included the majority of the responses from females. The participants knowledge

regarding some aspects of dental veneers where considered unsatisfactory. This is in agreement with a study conducted by Alfouzan et al. that evaluated the awareness of dental veneers among Arabs (Mainly Saudis, Kuwaitis and Emiratis) which was reported as below satisfactory levels.8 The level of knowledge varied according to age and most of the correct responses were from those of 26-30 years of age. There was a direct relationship between the gender and the level of interest, the majority of the responses where female as expected due to the fact that females generally care more about their physical appearance compared to males.

Our study conducted only in Riyadh population showed that many didn't know that veneers could last more than 5-7 years if the veneers are properly done. Regarding the composite veneers knowledge, most also didn't know that there are two types of veneers and would only take 2 visits. In addition to that many were not aware that there are different types of veneers. They were not totally aware that there are also types of veneers that require no tooth preparation. On the other hand, the results showed that many knew there is no need for endodontic treatment of teeth prior to the prosthesis fabrication as well as the awareness around the high expense of ceramic veneers over composite veneers.

Results have also shown that participants were aware that veneers require better oral hygiene care in contrast to natural teeth. Similar was their level of awareness regarding the veneers distortion on the long run. Given the fact of easier access now to social media a lot of the information gained by our sample was through social media, corresponding to the study on Dutch population done by Van de Belt et al. that also stated that many gained their information through social media.9 When asked about if they choose their dentist based on their social media accounts, a considerable percentage showed that they do sometimes in accordance with a previous study.10

#### **Conclusion**

Within the limitations of the study, it may be concluded that based on the result the awareness of majority of people regarding veneers is moderate. Moreover, they have lack in the source of their information. Hence, we recommend to encourage all dentists to share more about the correct information regarding dental health and dental procedures through social media to increase the awareness level among societies.

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## Figures



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Figure 5. (Q15) Do you believe in dental ads that are seen in social media platforms from social media influencers?



Figure 7. (Q17) From where did you obtain your source of knowledge toward veneers?



Journal Of Applied Dental and Medical Sciences 6(1);2020

Tables

Table1. Relationship between questionnaire items Q1-Q6 and demographic variables													
Gender					Age				Nationality		Education		
										School degree	Bachel	Master degree	
Itam	_	Eemolo	Mala	19.25	26.20	21.40	40 -	Saudi	Non-	or	or	or	
O1	Ceramic	17.4%	31.5%	13.3%	20-30	25.9%	22.7%	19.0%	29.6%	18.4%	18.4%	32.7%	
	Composite restoration	15.1%	12.9%	14.9%	25.0%	12.1%	11.5%	14.9%	12.3%	11.2%	16.2%	12.5%	
	I don't know	67.5%	55.6%	71.8%	52.2%	62.1%	65.8%	66.1%	58.0%	70.4%	65.4%	54.8%	
	р		.000 <sup>*</sup>				<mark>.000</mark> *		<mark>0.071</mark>			<mark>.004<sup>*</sup></mark>	
Q2	7-5 years	35.0%	26.4%	47.3%	32.4%	28.6%	18.6%	33.4%	34.6%	34.1%	34.2%	27.9%	
	8-15 years	17.7%	23.0%	16.7%	24.3%	17.4%	19.7%	18.8%	17.3%	12.6%	20.3%	21.2%	
	Life long	9.6%	16.3%	8.1%	16.2%	14.3%	8.9%	10.7%	11.1%	9.4%	10.5%	15.4%	
	I don't know	37.6%	34.3%	27.9%	27.2%	39.7%	52.8%	37.1%	37.0%	43.9%	35.0%	35.6%	
	р		.007 <sup>*</sup>				.000 <sup>*</sup>		0.988			.043 <sup>*</sup>	
Q3	Dentist	18.5%	20.2%	17.2%	22.1%	21.4%	17.1%	18.2%	25.9%	25.1%	17.1%	16.3%	
	You	10.4%	12.9%	13.6%	12.5%	5.8%	10.4%	10.6%	13.6%	12.1%	10.1%	13.5%	
	Both	71.1%	66.9%	69.2%	65.4%	72.8%	72.5%	71.2%	60.5%	62.8%	72.8%	70.2%	
	р	0.483				0.070		0.122		.042*		<mark>.042<sup>*</sup></mark>	
Q4	General dentist	3.8%	2.2%	5.0%	2.2%	3.6%	2.2%	3.1%	8.6%	5.4%	3.4%	1.0%	
	Specialist	85.4%	83.1%	81.2%	89.0%	84.8%	88.5%	86.0%	72.8%	79.8%	86.3%	87.5%	
	Do not differentiate with me	10.8%	14.6%	13.8%	8.8%	11.6%	9.3%	10.8%	18.5%	14.8%	10.4%	11.5%	
	р		0.224		•	•	0.160		<mark>.003</mark> *			0.094	
Q5	One visit	4.8%	4.5%	4.7%	7.4%	4.5%	3.7%	4.6%	6.2%	7.2%	3.9%	4.8%	
	Two visit	20.6%	30.9%	29.0%	20.6%	20.1%	16.0%	21.7%	30.9%	18.4%	24.4%	18.3%	
	More than two visit	74.6%	64.6%	66.3%	72.1%	75.4%	80.3%	73.7%	63.0%	74.4%	71.7%	76.9%	
	р		<mark>.011<sup>*</sup></mark>				<mark>.003</mark> *		0.114			0.102	
Q6	Ceramic veneer	53.1%	56.7%	56.1%	50.7%	56.3%	49.8%	54.4%	46.9%	41.3%	56.4%	63.5%	
	Composite veneer	20.9%	22.5%	23.5%	27.2%	17.0%	18.2%	20.3%	30.9%	25.6%	20.1%	18.3%	
	Both equal cost	26.0%	20.8%	20.4%	22.1%	26.8%	32.0%	25.3%	22.2%	33.2%	23.5%	18.3%	
	р		0.343				.009 <sup>*</sup>		0.083			.000 <sup>*</sup>	

Table 2. Relationship between questionnaire items Q7-Q12 and demographic variables												
		Gen	Gender Age				Natio	nality	Education			
		Female	Male	18-25	26-30	31-40	40+	Saudi	Non- Saudi	School degree or below	Bachelor degree	Master degree or above
Q7	No need for flossing or brushing	6.6%	13.5%	5.5%	8.8%	6.7%	11.5%	7.7%	8.6%	8.5%	8.0%	4.8%
	Need more care than natural teeth	81.3%	61.8%	78.6%	80.9%	82.6%	71.4%	78.5%	70.4%	78.5%	77.5%	78.8%
	Same as natural teeth	12.1%	24.7%	15.9%	10.3%	10.7%	17.1%	13.7%	21.0%	13.0%	14.5%	16.3%
	р	.000*		<mark>.014<sup>*</sup></mark>			0.179		0.736			
Q8	Yes	78.8%	70.2%	80.7%	80.1%	78.1%	70.3%	77.4%	75.3%	75.3%	78.8%	71.2%
	No need	6.5%	9.6%	7.8%	8.1%	4.9%	7.1%	7.2%	4.9%	7.6%	6.1%	11.5%
	I don't know	14.7%	20.2%	11.5%	11.8%	17.0%	22.7%	15.4%	19.8%	17.0%	15.0%	17.3%
	р	<mark>.04</mark>	·6 <sup>*</sup>		.0 <mark>.</mark>	0 <mark>5</mark> *		0.4	472		0.252	1
	Agree	19.4%	17.4%	20.9%	19.1%	19.6%	16.0%	19.2%	17.3%	24.7%	18.4%	11.5%
Q9	Disagree	80.6%	82.6%	79.1%	80.9%	80.4%	84.0%	80.8%	82.7%	75.3%	81.6%	88.5%
	р	0.536		0.471			0.669		<mark>.014<sup>*</sup></mark>			
	Agree	4.3%	10.7%	6.8%	7.4%	4.5%	3.3%	4.9%	11.1%	7.2%	5.4%	1.9%
Q10	Disagree	95.7%	89.3%	93.2%	92.6%	95.5%	96.7%	95.1%	88.9%	92.8%	94.6%	98.1%
	р	.001*		0.169			.019 <sup>*</sup>		0.149			
	Agree	30.5%	34.8%	24.8%	36.8%	26.8%	41.3%	31.5%	28.4%	44.4%	26.9%	31.7%
Q11	Disagree	69.5%	65.2%	75.2%	63.2%	73.2%	58.7%	68.5%	71.6%	55.6%	73.1%	68.3%
	р	0.253		.000*			0.567		.000 <sup>*</sup>			
	Agree	32.6%	38.8%	39.9%	33.8%	32.6%	25.7%	33.4%	37.0%	28.3%	34.2%	42.3%
Q12	Disagree	67.4%	61.2%	60.1%	66.2%	67.4%	74.3%	66.6%	63.0%	71.7%	65.8%	57.7%
	р	0.115			<mark>.002<sup>*</sup></mark>			0.507		.039 <sup>*</sup>		

Table 3. Relationship between questionnaire items Q13-Q17 and demographic variables												
		Gender		Age				Nationality		Education		
										School		Master
										degree	Bachel	degree
τ.		<b>F</b> 1	26.1	10.05	26.20	21.40	10	G 1	Non-	or	or	or
Items 012	A 2022	Female		18-25	26-30 52 70/	31-40	40+	Saud1	Saud1	20.00	degree	above
QIS	Agree	48.0%	44.9%	33.4%	33.7%	44.2%	55.7%	48.2%	38.3%	39.9%	49.5%	31.0%
	Disagree	52.0%	55.1%	44.6%	46.3%	55.8%	64.3%	51.8%	61.7%	60.1%	50.7%	49.0%
	р		0.464				.000 <sup>*</sup>		0.085			.037 <sup>*</sup>
Q14	Agree	90.2%	83.7%	91.1%	89.0%	89.7%	85.5%	89.6%	82.7%	87.4%	89.8%	87.5%
	Disagree	9.8%	16.3%	8.9%	11.0%	10.3%	14.5%	10.4%	17.3%	12.6%	10.2%	12.5%
	р		<mark>.012</mark> *				0.154		0.058			0.544
Q15	Agree	13.2%	17.4%	11.2%	19.1%	12.5%	16.4%	12.6%	29.6%	16.6%	13.1%	13.5%
	Disagree	86.8%	82.6%	88.8%	80.9%	87.5%	83.6%	87.4%	70.4%	83.4%	86.9%	86.5%
	р		0.139				0.069		<mark>.000<sup>*</sup></mark>			0.429
Q16	Yes	13.8%	12.9%	12.0%	18.4%	14.3%	13.0%	13.4%	16.0%	10.8%	14.6%	13.5%
	No	49.3%	60.1%	50.1%	44.9%	55.4%	52.4%	51.0%	53.1%	50.7%	50.2%	58.7%
	Sometimes	36.9%	27.0%	37.9%	36.8%	30.4%	34.6%	35.6%	30.9%	38.6%	35.2%	27.9%
	р		.023 <sup>*</sup>		1	1	0.276		0.636			0.250
Q17	Dentist	19.1%	21.9%	14.9%	20.6%	25.4%	20.8%	19.4%	21.0%	13.9%	20.0%	28.8%
	Family and friends	32.9%	36.0%	35.5%	29.4%	34.4%	31.6%	34.9%	16.0%	30.9%	34.5%	31.7%
	Social media	37.1%	32.0%	42.8%	41.9%	28.1%	30.5%	35.3%	45.7%	42.2%	36.9%	18.3%
	books and articles	11.0%	10.1%	6.8%	8.1%	12.1%	17.1%	10.3%	17.3%	13.0%	8.6%	21.2%
	р		0.538				<mark>.000</mark> *		<mark>.004</mark> *			.000 <sup>*</sup>

Table 4. Descriptive statistics for the items Q1-Q8								
Questionnaire	e items	Responses	n	%				
Q 1	Veneer preference	Ceramic	201	19.9%				
		Composite restoration	149	14.7%				
		I don't know	662	65.4%				
Q2	Longevity of the veneers	7-5 years	339	33.5%				
		8-15 years	189	18.7%				
		Life long	109	10.8%				
		I don't know	375	37.1%				
Q3	Who do you prefer to select your Veneers	Dentist	190	18.8%				
	shade	You	110	10.9%				
		Both	712	70.4%				
	Who do you prefer to make your veneers?	General dentist	36	3.6%				
Q4	(knowing both of them able to do it)	Specialist	860	85.0%				
		Do not differentiate with me	116	11.5%				
	Knowledge of the number of visits required	One visit	48	4.7%				
Q5	for the veneer treatment	Two visit	227	22.4%				
		More than two visit	737	72.8%				
Q6	Type of veneer having higher cost	Ceramic veneer	544	53.8%				
		Composite veneer	214	21.1%				
		Both equal cost	254	25.1%				
Q7	Knowledge about oral hygiene care with	no need for flossing or	79	7.8%				
		need more care than natural teeth	788	77.9%				
		same as natural teeth	145	14.3%				
Q8	Periodic checkup of veneered teeth	Yes	782	77.3%				
		No need	71	7.0%				
		I don't know	159	15.7%				

Table 5. Descriptive statistics for Q9-Q14								
	Questionnaire items	Agree	Disagree					
Q9	All veneered teeth required Root Canal Treatment before	193 (19.1%)	819 (80.9%)					
Q10	Can apply veneers on decayed teeth	55 (5.4%)	957 (94.6%)					
Q11	All veneered teeth must be in same shape & length	316 (31.2%)	696 (68.8%)					
Q12	There is direct and indirect types of veneer	341 (33.7%)	671 (66.3%)					
Q13	There are types of veneers that required no preparation	480 (47.4%)	532 (52.6%)					
Q14	Dental veneers can be distorted with time	901 (89.0%)	111 (11.0%)					