

The Influence of Social Media on Treatment Choices of Teeth bleaching Among the Population in Jeddah

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ABSTRACT

Advances in restorative dentistry have made many teeth whitening techniques economical and cost effective both in developed and developing countries. Moreover, Social media is now an important part of many people's lives and is playing an important role in any platform that allows people to interact and exchange information about teeth bleaching. Aim of the study: Assess the influence and role of social media on treatment choices of teeth bleaching among the population in Jeddah, Saudi Arabi. Design: cross sectional. Tool: An online questionnaire was constructed consisting of questions related to demographic data followed by questions including knowledge and perception towards teeth discoloration, bleaching/whitening, factors associated with the decision, etc. (624 participants). Results: Almost all of them heard about teeth whitening; from social media platforms as mainly from snapchat and Instagram. More than half of. The participants have previously performed teeth whitening; using tooth paste and patches. Minority of them have performed teeth whitening in the clinic under dentist supervision. Conclusion: They recommend performing teeth whitening under a dentist's supervision. Statistically significant differences were found regarding the type of social media platform with age, gender, income and perception that oral health impact general health.

Keywords: Social Media, Treatment Choices, Teeth bleaching

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INTRODUCTION

Social media is now an important part of many people's lives and is playing an important part in any platform that allows people to interact and exchange information. The demand for aesthetic procedures is growing, and perhaps social media is the driving force behind this revolution. Social media, with its widespread use, has a great influence on today's society, as it affects our perception of beauty and aesthetics, hence the perception of our physical appearance changes. Consequently, the desire for physical improvement increases Ferguson et al.

Social media as Twitter or Facebook has been also used in education, advertisement, as well as being used in self-promotion. Social media marketing is seen as beneficial in health care fields Chandra et al. Social media platforms

likely to have played a part in the recent expansion of cosmetic dentistry Kelleher, et al. The concern about dental appearance has been noted in the last few decades Carey, et al. In 2013, Al-Zarea, et al. Conducted a study in Saudi Arabia and found that majority of people were dissatisfied with their tooth color. Tooth stains are being classified as intrinsic, extrinsic or a combination of both [1].

A majority of extrinsic tooth stains are caused by smoking, certain foods, drinks (for example, tea and coffee), and aging. These stains may be eliminated by regular prophylactic procedures with dental hygienist. However, without regular dental visits or prophylactic procedures, extrinsic stains will become darker and more bothersome, though still treatable by bleaching. Modern bleaching agents are composed of both active and inactive ingredients [2-4]. The major inactive ingredients may include binding agents, carriers, surfactants (detergents), coloring dispersants, flavoring, and preservatives while the active ingredients may include hydrogen peroxide or carbamide peroxide compounds in concentrations ranging from 3% to 40%, similar to a tooth whitening dentifrice Al-Nomay, et al. Bleaching treatments that done without dentist supervision might enlarge gaps between enamel prisms,

resulting in invasive pathways to surface, rough enamel surfaces promote plaque formation Sato, et al. Bersezio, et al. Despite the rapid growth of social media and its impact on the attitudes of users toward teeth bleaching Alamassi, et al. Until now, there is no evidence about the influence and role of social media on treatment choices of teeth bleaching among the population in Jeddah, Saudi Arabia [5-7]. Therefore, the researcher found it necessary to investigate and estimate the role of social media platforms on the participant's choices regarding teeth bleaching.

Aim of the study

Determine the main source of information on teeth whitening procedures among the population of Jeddah.

Assess the influence and role of social media on treatment choices of teeth bleaching among the population in Jeddah, Saudi Arabia.

Research question

What is the influence and role of social media on treatment choices of teeth bleaching among the population in Jeddah, Saudi Arabia?

MATERIALS AND METHOD

Materials

Design

Cross sectional study design was used.

Setting

Online survey

Subjects

Convenient-sampling technique will be employed and sample size was calculated using a web-based tool, "Survey Monkey" with the population of Jeddah of 4,781,000 in 2022 and a confidence level of 95% with margin of error of 3% (624 participants).

Exclusion criteria

Be less than 18 years of age.

From outside Jeddah

Tools

One tool was utilized by the researcher for data collection, in order to fulfill the study aim. The survey was adapted from a previous study by Nora Nomay titled "Public attitude and awareness towards their teeth color and dental bleaching in Saudi Arabia: A cross-sectional survey" [8-10]. The self-administered questionnaire composes of two main sections. Firstly, socio-demographic data which included age, gender, occupation, marital status, educational level, city of residence. Secondly, attitude towards oral hygiene and teeth bleaching was assessed by questions addressing the following: willingness to undergo bleaching in the future, approving the use of whitening material on the teeth surfaces to get a lighter shade of teeth color

and lastly source of information on teeth bleaching and the influence of social media on the treatment modalities[11].

METHODOLOGY

Ethical Approval from Ibn Sins National College Research Center was taken. Tool was adopted from English and Arabic drafts of the questionnaire were prepared by the authors and checked for content validity and dependability [12].

Pilot study

Before conducting the actual study, a pilot study was carried out on 10% of the study patients (60 participants) online; to ascertain the clarity and applicability of the study tools and to identify obstacles that may be faced during data collection. However; these participants were not included within the actual study subjects. The Data collection was done using online survey from the period of March 2021-June 2021 [13-15].

Ethical considerations

Participants consent will be taken upon entering the questionnaire. Participant privacy was assured and the purposes of the study were explained to all the studied participants stressing confidentiality and anonymity of the collected data for each one was ascertained.

Statistical analysis

Data collected will be entered in MS Excel by a calibrated investigator and statistical analysis will be done using SPSS version 23 (IBM Corp. USA) by an independent biostatistician.

Categorical variables will be summarized as proportions and frequencies and any possible relationship of the variables will be analyzed using Pearson's Chi-square test.

Continuous variables obtained will be expressed as mean and standard deviation.

The significance value (p-value) ≤ 0.05 is considered as statistically significant.

RESULTS

This table showed that the majority of participants (73.2%) aged from 18-40 years. More than half (57.1%) were females, single (53.8%), from Jeddah (71.3%), with average income level (59.1%).

This table revealed that (63.0%) of participants agreed that oral health impacts general health, (70.7%) brush their teeth once or twice a day, (69%) visit the dentist rarely or if they feel pain and the last visit for the dentist was over a year or two years ago for a filling (24%) or pain purposes (34.8%).

This table showed that one third of participants (34.62%) are satisfied with their overall smile and teeth color (30.59%).

Table 1: frequency distribution of the participants' sociodemographic characteristics.

	N(624)	%
Age		
<18	28	4.5
18-25	142	22.8
26-30	172	27.6
31-40	142	22.8
41-50	100	16
>50	40	6.4
Gender		
Female	356	57.1
Male	268	42.9
Marital status		
Single	336	53.8
Married	288	46.2
City		
Jeddah	445	71.3
Other	179	28.7
Income level		
I don't have	5	0.8
Low	193	30.9
Average	369	59.1
High	57	9.1

Table 2: assessment of participants' knowledge about dental health.

	N	%
Oral health impacts general health		
I do not agree	29	4.6
I agree	393	63
Strongly agree	202	32.4
How often do you brush your teeth?		
Twice with the use of the thread	80	12.8
Twice a day	221	35.4
Once a day	220	35.3
2-3 times a week	84	13.5
rarely	19	3
How many times a year do you visit the dentist?		
Once every six months	107	17.1
once a year	83	13.3
If you feel pain	224	35.9
rarely	210	33.7
When was your last visit to the dentist?		
3 months ago	123	19.7
6 months ago	129	20.7
over a year ago	184	29.5
over two years ago	188	30.1
What was the reason for the visit?		
Regular inspection visit	42	6.7
Lime cleaning and removal	131	21
Fillings	150	24
Pain	217	34.8
Cosmetic procedure	84	13.5

This table revealed that majority of participants (96.2) was heard about teeth whitening from social Media platforms (76.3%). Regarding the type of social Media platforms, (42.6%) headed from snapchat and (30.6 %) from Instagram. (37.2%) of participants not fully credible for the results of the products advertised on

Table 3: Assessment of participants' satisfaction of their smile and teeth color.

	N	%
How satisfied are you with your overall smile?		
% of satisfaction	34.62%	
Range	1-10.	
Mean±SD	3.461±1.274	
How satisfied are you with your teeth color?		
% of satisfaction	30.59%	
Range	1-10.	
Mean±SD	3.059±1.295	

social media, while (22.3%) were convinced. majority of participants (71.9%) think that they need teeth whitening because they see results for a celebrity on social media platforms (42.3%) and not convinced of the presence of pigmentation on the surfaces of their teeth / yellowish color of their teeth (41.8%).

This table clarified that more than half of participants (52.7%) undergone teeth whitening using whitening toothpaste (43.2%), instant teeth whitening patches from pharmacy or beauty supply stores (32.2%) and (28.9%) perform teeth whitening in the clinic under the supervision of a dentist. Less than half of participants (44.4%) were not completely convinced with the results of teeth whitening procedure because the expected change in tooth color did not occur (58.0%) and presence of severe sensitivity in the teeth after whitening (20.9%). Majority of them (81.7%) think that they need to whiten their teeth under medical supervision (76.5%).

This table showed a significant difference between social media platforms and age, gender, income level and level of agreement about effect of oral health on general health. Within age, most of participant aged from 31-40 years knew from twitter and Facebook, while Tiktok were frequently used by participants from 18-25 years of age. Participants with low income and males were knew from Facebook, while females were mostly knowing from snapchat, Tiktok and Instagram.

This table revealed that there was no statistically significant difference between social media platforms and type of teeth whitening method

DISCUSSION

Teeth bleaching or whitening has become a common practice, and products applied in the clinic by the dentist, as well as over-the-counter products, are getting more and more popular Bersezio, et al. Social media platforms consider a cornerstone in determining and manipulating the knowledge and teeth bleaching methods and alternatives Mellgren, et al.

The study results revealed that the majority of the participants aged from 18-40 years, more than half were females, single, from Jeddah, with an average income and agreed that oral health impacts the general health. Majority of them brush their teeth daily and unsatisfied about their smile and teeth color [16]. Almost all of

Table 4: Assessment of participants' knowledge about teeth whitening.

	N	%
Have you heard about teeth whitening?		
No	24	3.8
Yes	600	96.2
If yes, where did you hear about teeth whitening?		
Dentist	62	10.3
Friends/relatives	80	13.3
Social Media platforms	458	76.3
If it was through social media platforms, could you specify which one of them?		
Twitter	32	7
Instagram	140	30.6
Snapchat	195	42.6
Tiktok	34	7.4
Facebook	51	11.1
Other	6	1.3
How credible are the results of the products advertised on social media from your point of view?		
Not completely convinced	93	14.9
Unconvinced	98	15.7
To some extent	232	37.2
Convinced	139	22.3
Totally convinced	62	9.9
Do you think you need teeth whitening?		
Yes	447	71.6
No	174	27.9
Maybe	3	0.5
If you answered yes, why do you think you need to whiten your teeth?		
The opinion of the dentist in one of the visits.	28	6.3
The opinion of a relative or friend.	39	8.7
See results for a celebrity on social media platforms.	189	42.3
Not convinced of the presence of pigmentation on the surfaces of my teeth / yellowish color of my teeth.	187	41.8
other	4	0.9

Table 5: assessment of participants' practice about teeth whitening.

	N	%
Have you undergone teeth whitening?		
No	295	47.3
Yes	329	52.7
Whitening toothpaste.	142	43.2
Instant teeth whitening patches from pharmacy or beauty supply stores	106	32.2
Light-assisted home teeth whitening devices	63	19.1
Teeth whitening in the clinic under the supervision of a dentist	95	28.9
Home molds specially designed for personal use according to the size of the teeth and jaw	31	9.4
How satisfied are you with the results of teeth whitening procedure?		
Not completely convinced	277	44.4
Unconvinced	114	18.3
To some extent	132	21.2
Convinced	49	7.9
Totally convinced	52	8.3
If you are not satisfied with the result, why are you not satisfied with the end result?		
The expected change in tooth color did not occur.	149	58
Severe sensitivity in the teeth after whitening.	53	20.6
Crowding and misalignment of the teeth.	7	2.7
The shape of the teeth (protrusion / retraction / voids).	16	6.2
Whitening toothpaste.	32	12.5
Do you think you need to whiten your teeth?		
No	114	18.3
Yes	510	81.7
If your current experience is without medical supervision, do you think it is best to re-whiten your teeth under medical supervision?		
Yes	421	67.5
No	30	4.8
Maybe	173	27.7

Table 6: significance of difference between participants' sociodemographic characteristics and social media platforms.

		If it was through social media platforms, could you specify which one of them?						Chi-square			
		Twitter	Instagram	Snapchat	Tiktok	Facebook	Other	X2	P-value		
Age	<18	N	0	5	7	6	1	0	66.42	0	
		%	0.00%	3.60%	3.60%	17.60%	2.00%	0.00%			
	18-25	N	5	32	49	11	5	0			
		%	15.60%	22.90%	25.10%	32.40%	9.80%	0.00%			
	26-30	N	9	38	54	4	8	1			
		%	28.10%	27.10%	27.70%	11.80%	15.70%	16.70%			
	31-40	N	11	28	55	5	19	1			
		%	34.40%	20.00%	28.20%	14.70%	37.30%	16.70%			
41-50	N	4	30	21	8	14	0				
	%	12.50%	21.40%	10.80%	23.50%	27.50%	0.00%				
>50	N	3	7	9	0	4	4				
	%	9.40%	5.00%	4.60%	0.00%	7.80%	66.70%				
Gender	Female	N	16	78	126	21	14	2	25.212	0	
		%	50.00%	55.70%	64.60%	61.80%	27.50%	33.30%			
	Male	N	16	62	69	13	37	4			
		%	50.00%	44.30%	35.40%	38.20%	72.50%	66.70%			
Marital status	Single	N	17	78	100	23	25	2	4.875	0.431	
		%	53.10%	55.70%	51.30%	67.60%	49.00%	33.30%			
	Married	N	15	62	95	11	26	4			
		%	46.90%	44.30%	48.70%	32.40%	51.00%	66.70%			
City	Jeddah	N	19	98	138	20	35	4	3.219	0.666	
		%	59.40%	70.00%	70.80%	58.80%	68.60%	66.70%			
	Other	N	13	42	57	14	16	2			
		%	40.60%	30.00%	29.20%	41.20%	31.40%	33.30%			
Income level	I don't have	N	0	1	1	1	0	0	52.44	0	
		%	0.00%	0.70%	0.50%	2.90%	0.00%	0.00%			
	Low	N	7	45	58	7	35	0			
		%	21.90%	32.10%	29.70%	20.60%	68.60%	0.00%			
	Average	N	21	74	125	25	13	4			
		%	65.60%	52.90%	64.10%	73.50%	25.50%	66.70%			
	High	N	4	20	11	1	3	2			
		%	12.50%	14.30%	5.60%	2.90%	5.90%	33.30%			
	Oral health impacts general health	I do not agree	N	0	7	7	2	3	0	28.463	0.002
			%	0.00%	5.00%	3.60%	5.90%	5.90%	0.00%		
I agree		N	22	95	120	23	44	1			
		%	68.80%	67.90%	61.50%	67.60%	86.30%	16.70%			
Strongly agree		N	10	38	68	9	4	5			
		%	31.30%	27.10%	34.90%	26.50%	7.80%	83.30%			

Table 7: Significance of difference between social media platforms and type of teeth whitening method.

		If it was through social media platforms, could you specify which one of them?					Chi-square	
		Twitter	Instagram	Snapchat	Tiktok	Facebook	X2	P-value
Whitening toothpaste.	N	8	32	55	3	4	1.735	0.885
	%	40.00%	40.50%	43.00%	25.00%	36.40%		
Instant teeth whitening patches from pharmacy or beauty supply stores	N	7	31	38	3	1	7.346	0.196
	%	35.00%	39.20%	29.70%	25.00%	9.10%		
Light-assisted home teeth whitening devices	N	2	16	30	5	3	5.768	0.329
	%	10.00%	20.30%	23.40%	41.70%	27.30%		
Teeth whitening in the clinic under the supervision of a dentist	N	6	24	30	3	5	3.578	0.612
	%	30.00%	30.40%	23.40%	25.00%	45.50%		
Home molds specially designed for personal use according to the size of the teeth and jaw	N	1	9	11	1	2	2.198	0.821
	%	5.00%	11.40%	8.60%	8.30%	18.20%		

them heard about teeth whitening; from social media platforms as snapchat and Instagram. More than half previously performed teeth whitening; using toothpastes

and patches. Minority of them perform teeth whitening in the clinic under dentist supervision. However, they were unsatisfied by the products because the results are

not as expected and due to the presence of postoperative sensitivity. They recommend doing teeth bleaching under dentists' supervision. Statistically significant differences were found regarding the type of social media platform with age, gender, income and perception that oral health impact general health [17].

Supporting the study results which confirmed that majority of participants using various teeth whitening products; Perdigão, et al. Go in the same line and concluded that demand for tooth whitening has been reflected in the various products and methods available. Social media widely publicizes supposedly innovative techniques to improve the appearance of teeth.

Most of studied population was unsatisfied with their smile and tooth color. These results were harmonious with Chisini, et al. Who reported that dental appearance is an important component of facial attractiveness? Moreover, Alamassi, et al. Concluded that most of the patients are not satisfied with the color of their teeth, and their most desired aesthetic treatment is bleaching. Social media could be a suitable channel for special educational programs designed by dental professionals to increase the general population's awareness of tooth discoloration and bleaching [18-20].

Age play an important role and positive attitude toward teeth bleaching. Reported that gender differences were observed with regards to the attitude towards bleaching. Moreover, participants who had the knowledge of teeth color showed more positive attitude towards teeth bleaching.

Most of patients using commercial products without medical supervision that place the patient under a risk of various side effects. This result is supported by Sato, et al.; Dahl, et al. who found that hydrogen peroxide used in clinical bleaching protocols dramatically alters the structural and biochemical properties of dental hard and soft pulp tissue. In addition, Fiorillo, et al. Confirmed that tooth whitening treatment is not suitable for everyone and must be carefully evaluated by a specialist.

Regarding the population knowledge about tooth bleaching, the results of the present study were opposite with Eyyd, et al. Who found that students' level of knowledge regarding discoloration is unsatisfactory but satisfactory regarding bleaching.

Most of the participants heard about teeth bleaching via advertisements. In addition, most of them have used home bleaching more than the professional bleaching methods. Respondents with frequent dental visits had higher levels of knowledge on teeth bleaching compared to respondents with a lack of dental visits AlOtaibi, et al. Massive online communication of patient experiences made possible through social media will continue to influence the practice of medicine, both aesthetic and otherwise Schlichte, et al. Simsek, et al. Didn't go in the same line and recommended that YouTube™ should not be used as a thoroughly reliable and accurate source for patient information about teeth whitening. More

informative and reliable content YouTube™ videos about teeth whitening should be uploaded by professionals.

CONCLUSION AND RECOMMENDATIONS

Social media platforms play an important role regarding the knowledge about tooth bleaching and its different methods of application. Further efforts should be paid to increase the public awareness about the benefits of teeth bleaching under dentists' supervision.

REFERENCES

1. Nomay N. Public attitude and awareness towards their teeth color and dental bleaching in Saudi Arabia: A cross-sectional survey. *J Epidemiology Community Health* 2016; 8:45-52.]
2. Sato C, Rodrigues FA, Garcia DM, et al. Tooth bleaching increases dentinal protease activity. *J Dent Res* 2013; 92:187-192.]
3. Mellgren T, Qin T, Öhman-Mägi C, et al. Calcium phosphate microspheres as a delivery vehicle for tooth-bleaching agents. *J Dent Res* 2018; 97, 283-288.]
4. Dahl JE, Pallesen U. Tooth bleaching-a critical review of the biological aspects. *Crit Rev Oral Biol* 2003; 14:292-304.
5. Eyyd A, Aldosari A, Alyousef S, et al. Knowledge and perception of saudi high school boys towards teeth whitening/bleaching. *Arch Pharm Pract* 2021; 1:130.]
6. Alamassi BY, AbuMostafa A, Alkhalidi SA, et al. Perception and knowledge of adult saudi patients about tooth discoloration and vital bleaching. *Int J Med Dent Health Sci* 2017; 4.]
7. Bersezio C, Martín J, Mayer C. et al. Quality of life and stability of tooth color change at three months after dental bleaching. *Qual Life Res* 2018; 27:3199-3207.]
8. Fiorillo L, Laino L, De Stefano R, et al. Dental whitening gels: Strengths and weaknesses of an increasingly used method. *Gels* 2019; 5:35.]
9. Chisini LA, Cademartori MG, Collares K, et al. Desire of university students for esthetic treatment and tooth bleaching: A cross-sectional study. *Braz J Oral Sci* 2019; 18:e191648-e191648.]
10. Bersezio C, Sánchez F, Estay J, et al. Inflammatory markers IL-1 β and RANK-L assessment after non-vital bleaching: A 3-month follow-up. *J Esthet Restor Dent* 2020; 32:119-126.]
11. AlOtaibi G, AlMutairi MS, AlShammari MZ, et al. Prevalence and public knowledge regarding tooth bleaching in Saudi Arabia. *J Family Med Prim Care* 2020; 9:3729.]
12. Al-Nomay NS, Ahmed AE, Al-Hargan A, et al. Public knowledge of tooth bleaching in Riyadh, Saudi Arabia. *J Int Oral Health* 2015; 7:27.]
13. Schlichte MJ, Karimkhani C, Jones T, et al. Patient use of social media to evaluate cosmetic treatments and procedures. *Dermatol Online J* 2015; 21.]

14. Simsek H, Buyuk SK, Cetinkaya E, et al. "How I whiten my teeth": YouTube™ as a patient information resource for teeth whitening. *BMC Oral Health* 2020; 20:1-6.
15. Perdigão J. *Tooth whitening*. Springer 2016.
16. Ferguson CJ, Muñoz ME, Garza A, et al. Concurrent and prospective analyses of peer, television and social media influences on body dissatisfaction, eating disorder symptoms and life satisfaction in adolescent girls. *J Youth Adolesc* 2014; 43:1-14.
17. Chandra B, Goswami S, Chouhan V. Investigating attitude towards online advertising on social media-an empirical study. *Management Insight* 2012; 8:1-14.
18. Kelleher M. The law is an ass: legal and ethical issues surrounding the bleaching of young patients' discoloured teeth. *Fac Dent J* 2014; 5:56-67.
19. Al-Zarea BK. Satisfaction with appearance and the desired treatment to improve aesthetics. *Int J Dent* 2013.
20. Carey CM. Tooth whitening: What we now know. *J Evid Based Dent Pract* 2014; 14:70-76.