



Original Article

ISSN : 2277-3657
CODEN(USA) : IJPRPM

Influence of Image Editing Practices and Social Media on Seeking Cosmetic Skin Care, Al-Jouf, Saudi Arabia

**Ahmed Hamad Almohammed^{1*}, Afrah Mohaimeed Altaymani², Ziyad Muharib N Alruwaili²,
Renad Mohammed Abdulrahman Alnasser²**

¹Dermatology Unit, Department of Internal Medicine, College of Medicine, Jouf University, Saudi Arabia.

²College of Medicine, Jouf University, Saudi Arabia.

*Email: Ahjalmohammed@ju.edu.sa

ABSTRACT

People who use social media platforms like Instagram frequently edit their photos. However, the relationship between social media use and the desire to see a dermatologist among young adults is unknown. This study aims to determine the prevalence of cosmetic dermatological care among social media users and investigate the various motivation for seeking cosmetic dermatological care. Saudis in the Al-Jouf region were the target population of this survey-based cross-sectional study. Data were analyzed using SPSS version 21. The level of significance was $p < 0.05$. The collection of data was done through the academic year 2022/2023. The study included 550 participants with 72% being females. About (44.5%) of the studied participants were in the age category of (18-24) years old. Approximately half of them (49.3%) said they had edited personal photos prior to social media posting. The overall prevalence of cosmetic dermatology care from a dermatologist was (38.7%). Nearly two-thirds (66.4%) stated that a dermatologist is considered the best source of dermatology care advice. Nearly half of the Saudi population reported editing their pictures on social media, and one-fifth hid their skin lesions as they wanted to look perfect. Imperfect pictures were a source of anxiety and psychological burden for the participants. The main reasons for seeking cosmetic dermatology care were to appear beautiful without makeup and treat skin damage to seem prettier.

Key words: Photograph editing, Social media, Cosmetic skin care, Dermatological care, Saudi Arabia

INTRODUCTION

Researchers have recently shown an increased demand and acceptance of both invasive and non-invasive cosmetic procedures [1, 2]. Cosmetic operations have become a rising phenomenon in our culture, with a significant number of surgical and non-surgical procedures performed yearly [3].

According to the International Society of Aesthetic Plastic Surgeons, Saudi Arabia is ranked 22nd among the top 25 countries worldwide, with the greatest cosmetic procedure prevalence rates [1]. A recent study conducted in Riyadh shows that 55.4% of the participants had experienced a cosmetic procedure [2].

This public interest is increased due to a variety of factors, and social media platform appears to be one of the most important and key factors [4], especially those applications with photo editing practice that allows one to change one's physical appearance in under a minute by filtering, reshaping, and erasing unsightly skin issues [5]. A cross-sectional study on the Nepal population found that one-fourth of the users modified more than 40% of the photographs they shared on social media. The most prevalent reason for image alteration (36.3%) was to conceal skin blemishes [6]. Results of Another study by Julianna Martel *et al.* 228 (88.7%) out of 257 responses reported that they edited a photo before posting on Instagram, and 145 (63.6%) of them edited a skin lesion. 128

(88.3%) of those who edited skin lesions modified acne/acne scars. Individuals who believed the editing increased their awareness of skin lesions were much more likely to believe they needed a dermatologist consult [7].

A study in Maryland aimed to determine whether opinions about cosmetic surgery are influenced by factors such as self-esteem, social media use, and photo editing software. The study involves 252 participants. 184 (73.0%) were women, and it was found that the use of specific social platforms and photo-editing software may be associated with the rise in the acceptance of cosmetic surgery [8].

Another study by Parsa *et al.* aimed to determine whether the use of a digital appearance manipulation (DAM) application leads directly to higher acceptance of cosmetic surgery and quantifies the influence of photo alteration on an individual's self-esteem. On the post-DAM cosmetic surgery acceptability scale, study participants revealed greater consideration of cosmetic surgery (+3.45, $p = 0.04$). Females were more likely to consider cosmetic surgery to stay youthful (+1.4, $p = 0.04$) when divided by gender. After DAM, males showed augmented social motivation for cosmetic operations (+1.5, $p=0.04$). Males (+1.0, $p=0.04$) and females (+0.8, $p = 0.03$) both confirmed that they prospected "to undertake cosmetic surgery" [9].

Another previous study was conducted in India to examine how individuals' confidence, self-esteem, and perception of body image among them are affected by taking, altering (using a photo editing app), and posting selfies on social media platforms. Also, to know if the practice of taking selfies promotes self-perception dysmorphia and a rising willingness to undertake cosmetic surgery. The study showed that there was a decrease in confidence ($P.002$) and physical attractiveness ($P.001$), a substantial increase in social anxiety ($P.004$), and a desire to go through with cosmetic surgery ($P.001$). Furthermore, all of the findings were higher in women than in men [10].

In Saudi Arabia, various studies are being conducted to assess motivation to undergo cosmetic procedures, and one study revealed that 146 out of 402 reported having cosmetic operations done, the majority of which were hair removal and liposuction. The main driving force was personal inclination [3]. However, the influence of social media and photo editing practices on seeking cosmetic dermatological care has remained unclear in the Al-Jouf region, which we aim to assess in our study.

Objectives

The study is designed to shed light on the incidence of cosmetic dermatological procedures and epidemiology and demographic pattern of patients undergoing cosmetic dermatological care in the Al-Jouf region, Saudi Arabia, through:

1. The determination of the overall prevalence of cosmetic dermatological care among social media users.
2. Studying the various motivation for seeking cosmetic dermatological care.
3. Correlation between photo editing practice and cosmetic dermatological procedure among the participants.

Research hypothesis

Null hypothesis

Photo editing practice and social media have impacted the seeking of cosmetic skin care in the general population in the Al-Jouf region.

Alternative hypothesis

Photo editing practice and social media have an impact on seeking cosmetic skin care for the general population in the Al-Jouf region.

Research question

Dose photo editing practices and social media have an impact on seeking cosmetic skin care among the general Saudi population in the Al-Jouf region?

MATERIALS AND METHODS

A survey-based cross-sectional study was carried out to gauge locals' knowledge of skin conditions in the Al-Jouf area.

Data collection

Ahmed *et al.* (2018) web-based, self-administered questionnaire was employed to gather the data. The survey was delivered via social media applications to the Al-Jouf population in the form of a google form. The questionnaire was validated using a pilot study to guarantee its validity. Similarly, internal consistency and dependability were ensured using Cronbach's alpha.

Sample size

The sample size in an infinite population was calculated using the statistical website OpenEpi, assuming a level of knowledge of around 60% accurate responses, at 5% accuracy, and statistical power of 95%. These factors resulted in a sample size of at least three hundred and eighty-five people.

Data collection tool

The Survey-based study used a previously validated questionnaire from a study conducted by Agrawal. [6], the survey comprised six parts: the first part to investigate the socio-demographic characteristics of the participants, the second part to investigate participant's use of social networking sites, the third part to evaluate photo editing practices among the participants, the fourth part to investigate participant's awareness, and motivation about cosmetic dermatological care, fifth part to evaluate social media users' behavior in seeking cosmetic dermatology care, and the last section includes the previously validated Rosenberg Self-esteem scale to gauge the respondent's level of self-worth.

Data analysis

Data were analyzed using SPSS version 21. The level of significance was $p < 0.05$. Data was gathered over the academic year 2022–2023. Once the study received ethical approval, it was anticipated that it would be finished in six months.

RESULTS AND DISCUSSION

Table 1 shows the socio-demographic characteristics of Participants. About 550 individuals participated in this study. Among them (72%) were females. About (44.5%) of the studied participants were in the age category of (18-24) years old. The majority of them (96%) were Saudi. As regard level of education (60.7%) of them had Bachelor's degree. More than half of them (51.6%) were students. Also (61.5%) were single. Additionally, the monthly income of (56.9%) of them was less than 5000 SAR.

Table 1. Socio-demographic characteristics of the Participants (No= 550)

Variables	N	%	
Age	<18 years	58	10.5
	18-24 years	245	44.5
	25-34 years	121	22
	>35 years	126	22.9
Gender	Male	154	28
	Female	396	72
Nationality	Saudi	528	96
	Non-Saudi	22	4
Level of education	Intermediate school	48	8.7
	High school	136	24.7
	Bachelor's degree	334	60.7
	Masters and doctorate	14	2.5
	Others	18	3.3
Employment status	Student	284	51.6
	Employed	162	29.5
	Unemployed	64	11.6
	Retired	27	4.9
	Others	13	2.4

Marital status	Single	338	61.5
	Married	195	35.5
	Others	17	3.1
Monthly income	<5000 SAR	313	56.9
	5000-10000 SAR	114	20.7
	11000-15000 SAR	60	10.9
	16000-20000 SAR	48	8.7
	21000-50000 SAR	15	2.7

Table 2 shows the distribution of participants regarding their use of social media network sites. The most used social media application was Snapchat (26.9%). Nearly (39.8%) and (35.1%) of participants reported that they spend (4-6) and (1-3) hours on social media apps per day. The majority of them (80%) agreed that social media resulted in their awareness of cosmetic dermatology care. About (43.1%) stated that they previously posted a personal picture on social media applications. Snapchat was the preferred social media application when they wanted to post a personal picture (60.2%). Moreover (35.6%) and (16.7%) reported that they shared around (Less than 3) and (4-10) personal pictures on social media applications per week.

Table 2. Distribution of participants regarding use of social media network sites (No= 550)

Variables	(No.) (%)
The most used social media application	
Facebook	8 (1.5)
Twitter	87 (15.8)
Instagram	63 (11.5)
Snapchat	148 (26.9)
What's App	103 (18.7)
Tik Tok	128 (23.3)
Other	13 (2.4)
Hours spend on social media apps per day	
Less than one hour	30 (5.5)
1-3 hours	193 (35.1)
4-6 hours	219 (39.8)
7-10 hours	80 (14.5)
More than 10 hours	28 (5.1)
Social media use helped you to be more aware of cosmetic dermatology care	
Yes	440 (80)
No	110 (20)
Have you ever posted a picture of yourself on social media applications	
Yes	237 (43.1)
No	313 (56.9)
Preferred social media application when you want to post a picture of yourself	
Facebook	6 (1.1)
Twitter	29 (5.3)
Instagram	51 (9.3)
Snapchat	331 (60.2)
What's App	59 (10.7)
Tik Tok	22 (4)
Other	52 (9.5)
Numbers of pictures for yourself, your posts per week	
I do not share my pictures	217 (39.5)

Less than 3	196 (35.6)
4-10	92 (16.7)
More than 10	45 (8.2)

Table 3 and **Figure 1** show Photo editing practices. Approximately half of them (49.3%) said that they had edited personal photos before posting them on social media. About (23.1%) were made photo editing with a percentage of (5% - <20%). Almost (28.5%), (22.2%) of participants reported that hiding skin lesions and altering photos' size were the main reasons for editing the photos. Moreover, "skin looks perfect after editing" was the most prevalent explanation for skin lesion editing among (54.4%) of them. The majority (79.3%) agreed that using social media applications made them more aware of their skin lesions. Around (36.5%) revealed that previously untagged personal photograph from social media when it was not digitally enhanced or edited.

Table 3. Distribution of participants regarding Photo editing practices (No= 550)

Variables	(No.) (%)
Have you ever edited a photo of yourself before posting it on social media	
Yes	271 (49.3)
No	279 (50.7)
The percentage of altered photos shared on social media platforms	
No editing (0%)	287 (52.2)
5% - <20%	127 (23.1)
20% - <50%	48 (8.7)
50% - <80%	21 (3.8)
80% - 100%	67 (12.2)
Reason for editing the photos	
To Soften wrinkles	39 (7.1)
To change the shape of the eye, nose, lips	72 (13.1)
To whiten the teeth	12 (2.2)
To hide skin lesions	157 (28.5)
Because everyone does it	51 (9.3)
Alter the size of the photos	122 (22.2)
Others	97 (17.6)
Reason for editing the skin lesion	
I know other people do it	93 (16.9)
Other people seem to have perfect skin in photographs	43 (7.8)
I am embarrassed by my skin	44 (8)
After retouching, the skin seems flawless.	299 (54.4)
Others	71 (12.9)
Would using social media applications make you more conscious about your skin lesions	
Yes	436 (79.3)
No	114 (20.7)
Have you ever untagged or removed a photograph of yourself from social media if the photograph was not digitally enhanced or edited to your liking	
Yes	201 (36.5)
No	349 (63.5)

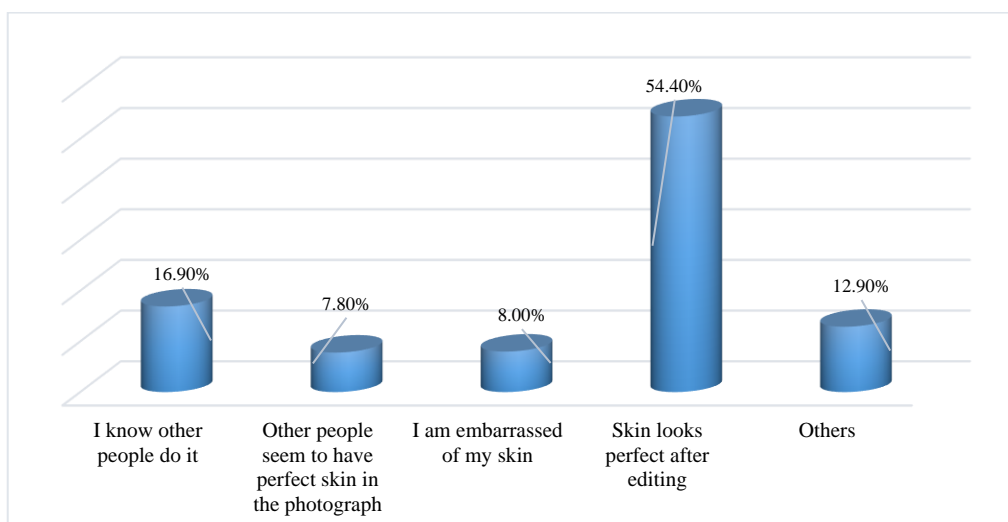


Figure 1. Reason for editing the skin lesion

Table 4 presents the cosmetic dermatology care-seeking behavior among social media users. An overall prevalence of 38.7% was seen in the consultation of a dermatologist for cosmetic care. Nearly two-thirds of them (66.4%) stated that a dermatologist is considered the best source of advice for cosmetic dermatology care. However, (32.9%) reported that high cost was the primary reason for not seeking dermatologist advice.

Table 4. Cosmetic dermatology care-seeking behavior among social media users (No= 550)

Variables	(No.) (%)
Have you ever visited a dermatologist for cosmetic dermatology care	
Yes	213 (38.7)
No	337 (61.3)
The best source of advice for cosmetic dermatology care	
Dermatologist	365 (66.4)
Beauty influencers	44 (8)
Family	40 (7.3)
Friends	28 (5.1)
Beautician	73 (13.3)
Reason for not taking the dermatologists' advice.	
No need	124 (22.5)
Costly	181 (32.9)
Busy schedule	161 (29.3)
My issue can be concealed by beauty items.	11 (2)
Fear of the operation	18 (3.3)
Unavailability of the services	15 (2.7)
Ineffective service	40 (7.3)

Table 5 shows participants' motivation for cosmetic dermatology procedures. Being able to look good without makeup was the main motivation (34.7%) for using cosmetic dermatology procedures. The second motivation reported by participants was repairing the damage to the skin (22.9%), followed by looking better, prettier, or more attractive (16.9%).

Table 5. Participants' motivations for going through with cosmetic dermatology procedures (No= 550)

Variables	(No.) (%)
Motivation for undergoing cosmetic dermatology procedure	
To improve the quality of life	48 (8.7)
Feel happy or better overall	60 (10.9)
Look young or fresher	32 (5.8)

Be able to look good without make up	191 (34.7)
Repair damage to the skin	126 (22.9)
To look prettier, better, or more appealing.	93 (16.9)

Table 6 shows the relationship between cosmetic dermatology care-seeking behavior and Photo editing practices. Around (22.7% out of 38.7%) of those who reported seeking cosmetic dermatology care had previously edited personal photos before posting them on social media. Hiding skin lesions was the main reason for photo editing (14.2%) among those who were seeking cosmetic dermatology care. Furthermore, (24%) of participants who were seeking cosmetic dermatology care said that the perfect look of skin after editing was the main purpose of editing skin lesions. Moreover (33.3% out of 38.7%) of them agreed that using social media applications made them more aware of their skin lesions. These associations between the behavior of pursuing cosmetic dermatology care and Photo editing practices are statistically significant (p -value $< .05$).

Table 6. Relation between Cosmetic dermatology care seeking behavior and Photo editing practices (No= 550)

Variable	Cosmetic dermatology care-seeking behavior		P -value*
	Yes	No	
	(No=213) (38.7%) (NO.) (%)	(No=337) (61.3%) (NO.) (%)	
Have you ever self-edited a personal photo before sharing it on social media			
Yes	125 (22.7)	146 (26.5)	<.001
No	88 (16)	191 (34.7)	
The percentage of altered photos shared on social media platforms			
No editing (0%)	98 (17.8)	189 (34.4)	.109
5%- <20%	54 (9.8)	73 (13.3)	
20%-<50%	18 (3.3)	30 (5.5)	
50%-<80%	9 (1.6)	12 (2.2)	
80%-100%	34 (6.2)	33 (6)	
Reason for editing the photos			
To Soften wrinkles	18 (3.3)	21 (3.8)	.008
To change the shape of the eye, nose, lips	30 (5.5)	42 (7.6)	
To whiten the teeth	5 (0.9)	7 (1.3)	
To hide skin lesions	78 (14.2)	79 (14.4)	
Because everyone does it	17 (3.1)	34 (6.2)	
Alter the size of the photos	36 (6.5)	86 (15.6)	
Others	29 (5.3)	68 (12.4)	
Reasons for correcting the skin lesions			
I know other people do it	22 (4)	71 (12.9)	.002
Other people seem to have perfect skin in the photograph	20 (3.6)	23 (4.2)	
I am embarrassed by my skin	19 (3.5)	25 (4.5)	
Skin looks perfect after editing	132 (24)	167 (30.4)	
Others	20 (3.6)	51 (9.3)	
Using social media applications made you more conscious about your skin lesions			
Yes	183 (33.3)	253 (46)	.002
No	30 (5.5)	84 (15.3)	

The motivation behind photo editing is a person's desire to appear better in pictures shared on social media. The discipline of dermatology could be affected by how social media affects young adults' self-perception. Social media and the internet have become more widely used in recent years, becoming new platforms for patient and doctor communication [11].

Our findings reported that the most used social media application was Snapchat (26.9%), followed by TikTok (23.3%) and WhatsApp (18.7%). About (43.1%) stated that they previously posted a personal picture on social media applications. Snapchat was the preferred social media application when they wanted to post a personal picture (60.2%). Prominent Social Media Sites and Their Impact on Modern Skincare: A person's physical appearance is a crucial component of their identity, and relationships between it and their self-perception start early in life [12]. Given this information, it makes sense that people would turn to social media, the most powerful instrument available today, to seek ideas and answers about their looks. According to the Pew Research Center, in 2020, YouTube (81.0%), Facebook (69.0%), Instagram (40.0%), Pinterest (31.0%), LinkedIn (28.0%), Snapchat (25.0%), Twitter (23.0%), TikTok (21.0%), and Reddit (18.0%) as the most popular social media platforms. Social media is quickly replacing traditional methods for communicating about health issues, networking on social and professional levels, and information collection [13]. The way doctors and people approach healthcare has changed as a result of social media's unparalleled level of interconnection and worldwide networking.

We found that the majority (80%) agreed that they become more conscious of aesthetic dermatology care because of social media platforms. The total prevalence of cosmetic dermatology treatment visits to a dermatologist was (38.7%). Nearly two-thirds of them (66.4%) stated that a dermatologist is considered the best source of advice for cosmetic dermatology care. This was consistent with Albeshri *et al.* [14]. As has been stated numerous times, social media heavily influences a person's dermatological decisions. This is made even more clear in a recent case report that details the condition of a Chinese woman who underwent forehead injections from a physician she found on the popular regional social networking site WeChat [15]. According to research that looked at the dermatologist's presence on social media platforms, TikTok posts had 70.0% instructional material in comparison to 90.0% on YouTube, 50.0% on Instagram, and 43.0% on Twitter [16]. Given the enormous impact of digital communication, doctors have a chance to actively lead these discussions and give health-related knowledge for patient participation and education [15].

Professional associations and publications focused on dermatology have the chance to take advantage of the exceptional possibilities these websites provide. A study that looked at dermatology on Snapchat showed that dermatologists still do not have a strong online presence. The findings showed that none of the patient advocacy groups, professional dermatological organizations, or dermatology-related journals had Snapchat accounts [17]. Another analysis of dermatology on Instagram revealed that the top ten dermatology publications on Facebook and Twitter were particularly absent from Instagram, with the user presence in this niche being dominated by private practices, cosmetics, and some patient advocacy groups. Organizations that ignore the opportunities offered by social networking sites run the risk of being left behind as a result of their inability to adapt to social media as a standard means of communication as technology continues to advance. Those that can use this tool effectively stand to gain a lot as social networking sites continue to draw more active users looking for health-related information [14].

In this study, nearly half (49.3%) reported that they had edited personal photos before posting them on social media. Almost (28.5%), of participants reported that hiding skin lesions and altering photos' size were the main reasons for editing the photos. Moreover, "skin looks perfect after editing" was the most prevalent reason for editing the skin lesion among (54.4%) of them. This suggests that cutaneous health has a particularly deep impact on a person's image of themselves, which may encourage such people to seek dermatologic therapy. Our results were in agreement with Martel *et al.* [7], who found that editing pictures and removing skin lesions was prevalent, especially among young people. The psychological impact of using social media and photo manipulation could be the driving force behind the need to seek help [18].

We also found that the majority (79.3%) agreed that using social media applications increased their skin lesion awareness. Around (36.5%) revealed that previously untagged personal photograph from social media when it was not digitally altered and enhanced. In a prior study, Mills *et al.* discovered that undergraduate girls experienced increased anxiety and decreased confidence when they were unable to modify a photo before uploading it [18]. Martel *et al.* [7] also found that to avoid shame, the majority of participants acknowledged retouching photos for skin problems. This suggests that unsightly skin lesions affect how one feels about oneself. The most often modified features among young adults who post on Instagram, in particular, were cutaneous lesions, particularly acne and acne scars. Together, these results indicate that frequent use of social media, particularly picture-based platforms, may be detrimental to some people's psychosocial functioning, including diminished self-esteem and an increased risk of sadness and anxiety.

The main motivation for seeking cosmetic dermatology help in this study was to look good without makeup and to repair skin damage to look prettier. Social media influence and presence are becoming increasingly important for dermatologists and aestheticians in spreading knowledge of their practice among users. Dermatologists should be aware that present and potential patients who use social media may have underlying difficulties with body image and self-worth. The dermatologist can choose the best course of therapy and effectively manage patients' expectations by understanding these feelings. It might also make it easier for dermatologists to focus on the problems that worry patients the most [7].

Moreover (33.3% out of 38.7%) of the participants in the current study acknowledged that utilizing social media applications increased their awareness of skin lesions. This link between cosmetic dermatology care-seeking behavior and photo editing practices was statistically significant (p -value $< .05$). Skin conditions are known to significantly affect a person's social interactions, self-esteem, and body image. One of the most prevalent skin conditions affecting teenagers is acne vulgaris. Over 70.0% of teenagers are known to use social media, with Instagram, Facebook, YouTube, Pinterest, and TikTok being the most popular sites. Given that social media is the most popular means of communication in Saudi Arabia, its influence there is highly noticeable. Although young adults are regarded as the group with the highest levels of body and image consciousness, over the past few years, they have successfully converted the previously entertainment-focused social media into a platform for education, helping to launch the body positivity movement in the process [19, 20].

In the end, we think our research adds new knowledge about why people modify photos to hide skin lesions and how social media exposure to skin lesions promotes the desire for dermatological care. Dermatologists should be prepared to discuss social media in the clinic with their patients, especially those who fall into the researched demographic. Social media could also be employed as a technique to reach more people in this group who have not yet visited a dermatologist. Due to their ability to reach and interact with a sizable audience on Instagram, dermatologists who are viewed as "influencers"[21] may be able to broaden access to and educate a huge number of people who edit photos and seek out dermatological care.

CONCLUSION

Snapchat, TikTok, and WhatsApp were the most commonly used social media platforms among the Saudi population in the Al-Jouf region. Social media was a main source for cosmetic dermatology care by the majority of the participants; consequently, they sought dermatologists' help. Nearly half of the population reported editing their pictures on social media, and one-fifth hid their skin lesions as they wanted to look perfect. Imperfect pictures were a source of anxiety and psychological burden for the participants. To appear beautiful without makeup and to treat skin damage to seem prettier were the main reasons for seeking cosmetic dermatology care. Realizing that each skin is unique and that we all have distinct demands for skin care is essential. Following another person's selection of skincare products and cosmetic procedures and adopting a general viewpoint could not produce the outcomes we want. In the end, we all want to feel and look beautiful, but it is not a good idea to rely solely on social media, especially when it comes to taking care of our skin.

ACKNOWLEDGMENTS : Many thanks to Dr. Ahmed Hamad Almohammed, Consultant of Internal medicine, Internal medicine department (Dermatology unit), College of Medicine, Jouf University, Saudi Arabia, for his continuous help, support and encouragement to complete this work.

CONFLICT OF INTEREST : None

FINANCIAL SUPPORT : None

ETHICS STATEMENT : The study was approved by the Ministry of Health's Research Ethics Committee with letter number (2022:34).

REFERENCES

1. ISAPS International Survey on Aesthetic/Cosmetic Procedures Performed in 2015. [cited 2023 Feb 1]; Available from: www.industryinsights.com
2. Almasri RA, Alomawi MA, Fahad M, Alhabshan HA, Alosaimi MS. Number of cosmetic procedures among women in Saudi community. *Int J Med Dev Ctries.* 2019;3(11):920-5.

3. Al Hindi AM, Abdalla SM, Al-Mutairi BA, Alnasser FA, Alhegail RO, Al-Ghannam RG, et al. Knowledge, attitudes, and practice of cosmetic procedures among population of Majmaah, Saudi Arabia, 2019-2020. *Pak J Med Health Sci.* 2022;16(02):907.
4. Maisel A, Waldman A, Furlan K, Weil A, Sacotte K, Lazaroff JM, et al. Self-reported Patient Motivations for Seeking Cosmetic Procedures. *JAMA Dermatol.* 2018;154(10):1167-74.
5. AlShuaibi M, Bin Maneea A, Almarshd A, AlShuaibi H, AlAmassi B. Ethical Dilemma and Controversies Over Cosmetic Laminate Veneers among Dentists in Riyadh. *Pharmacophore.* 2021;12(4):79-85. doi:10.51847/SbWahWVRsP
6. Agrawal H, Agrawal S. Impact of Social Media and Photo-Editing Practice on Seeking Cosmetic Dermatology Care. *Clin Cosmet Investig Dermatol.* 2021;14:1377-85.
7. Martel J, Powell E, Murina A. The effect of Instagram and photograph editing on seeking dermatologic care. *J Cosmet Dermatol.* 2020;19(10).
8. Chen J, Ishii M, Bater KL, Darrach H, Liao D, Huynh PP, et al. Association between the use of social media and photograph editing applications, self-esteem, and cosmetic surgery acceptance. *JAMA Facial Plast Surg.* 2019;21(5):361-7.
9. Parsa KM, Prasad N, Clark CM, Wang H, Reilly MJ. Digital Appearance Manipulation Increases Consideration of Cosmetic Surgery: A Prospective Cohort Study. *Facial Plast Surg Aesthet Med.* 2021;23(1):54-8.
10. Shome D, Vadera S, Male SR, Kapoor R. Does taking selfies lead to increased desire to undergo cosmetic surgery. *J Cosmet Dermatol.* 2020;19(8):2025-32.
11. Grover M. Defining the patient–physician relationship in the era of Facebook. *Academic Medicine.* 2010;85(8):1262.
12. Kira IA, Fawzi M, Shuwiekh H, Lewandowski L, Ashby JS, Al Ibraheem B. Do adding attachment, oppression, cumulative and proliferation trauma dynamics to PTSD Criterion “a” improve its predictive validity: Toward a paradigm shift?. *Curr Psychol.* 2021;40:2665-79.
13. Militello M, Yang RA, Anderson JB, Szeto MD, Presley CL, Laughter MR. Social media and ethical challenges for the dermatologist. *Curr Dermatol Rep.* 2021:1-8.
14. Albeshri M, Altalhab S, Alluhayyan OB, Farhat AM. The influence of modern social media on dermatologist selection by patients. *Cureus.* 2020;12(12).
15. Tan A, Gutierrez D, Milam EC, Neimann AL, Zampella J. Patient health-seeking behavior on WeChat: social media and dermatology. *JAAD Case Rep.* 2020;6(2):136-8.
16. Presley CL, Pulsipher KJ, Rietcheck HR, Szeto MD, Laughter MR, Dellavalle RP. Reply to “Dermatologists in social media: a study on top influencers, posts, and user engagement”: dermatologist influencers on TikTok. *Journal of the American Acad Dermatol.* 2022;86(2):e71-3.
17. Patel RR, Yazd N, Dellavalle RP. Dermatology on snapchat. *Dermatol Online J* 2017;23(7).
18. Mills JS, Musto S, Williams L, Tiggemann M. “Selfie” harm: Effects on mood and body image in young women. *Body Image.* 2018;27:86-92.
19. Cohen R, Newton-John T, Slater A. The case for body positivity on social media: Perspectives on current advances and future directions. *J Health Psychol.* 2021;26(13):2365-73.
20. Joshi M, Korrapati NH, Reji F, Hasan A, Kurudamannil RA. The Impact of Social Media on Skin Care: A Narrative Review. *Lviv Clin Bull.* 2022:1-2.
21. Sierro TJ, Young PM, Kassabian SK, Wu KK, Armstrong AW. Dermatologists in social media: A study on top influencers, posts, and user engagement. *J Am Acad Dermatol.* 2020;83(5):1452-5.