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Unveiling the Digital Aesthetic: Social Media Advertising's Impact on Cosmetic Surgery Desire in Saudi Arabia

Lama Alkhwildi

Lamalkhwildi@gmail.com

College of Medicine, Imam Mohammad Ibn Saud Islamic University (IMSIU)

Yara Alwathnani

College of Medicine, Imam Mohammad Ibn Saud Islamic University (IMSIU)

Abdulaziz Alkhwildi

College of Medicine, Imam Mohammad Ibn Saud Islamic University (IMSIU)

Mohammed Alkhwildi

College of Medicine, Imam Mohammad Ibn Saud Islamic University (IMSIU)

Shahad Alghanem

College of Medicine, Imam Mohammad Ibn Saud Islamic University (IMSIU)

Khalid Alshiekh

College of Medicine, Imam Mohammad Ibn Saud Islamic University (IMSIU)

Salman Alanazi

King Faisal Specialist Hospital & Research Centre

Abdulaziz Almodumeegh

College of Medicine, Imam Mohammad Ibn Saud Islamic University (IMSIU)

Amr Arkoubi

College of Medicine, Imam Mohammad Ibn Saud Islamic University (IMSIU)

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Abstract

Introduction: The growing impact of social media on self-perception and beauty standards has notably affected individuals' attitudes toward cosmetic procedures, particularly among young adults. With the rise of digitally altered images and the prevalence of beauty-related content, many individuals experience pressure to conform to idealized beauty norms, leading to increased interest in cosmetic surgery.This study investigates the influence of social media advertising on the desire for cosmetic surgery among adults in Saudi Arabia.

Methods: A comprehensive questionnaire was administered to 6,465 participants, capturing demographic information such as gender, age, and education, alongside their engagement with social media. The survey included items assessing social media appearance pressure, self-comparison, and considerations for cosmetic procedures. Statistical analyses were conducted using R v 4.3, employing Chi-square tests to evaluate associations between social media usage and interest in cosmetic surgeries.

Results: The findings revealed significant associations between social media exposure and the desire for cosmetic procedures. Females and younger individuals showed heightened interest, with 46.4% of interested respondents being female. Notably, while many participants felt pressured to alter their appearance due to social media, a majority remained hesitant to pursue cosmetic enhancements. Specifically, 88-90% of respondents rejected the idea of undergoing procedures influenced by social media trends, indicating a complex relationship between self-perception and cosmetic surgery desires.

Conclusion: This research underscores the significant impact of social media on perceptions of beauty and decisions regarding cosmetic procedures among adults in Saudi Arabia. Although social media serves as a key source of information and influences self-image, many individuals express reluctance to undergo surgical enhancements.

Level of Evidence IV

Introduction

The influential impact of social media in current decades in every aspect of human lives is growing significantly. Which is an impact that takes over all human social communications. With this feasibility, a lot of things don't appear in their true shape or form, including human-being external appearances. Thus, there are novel trends in using face adjustment, filters, and apps to enhance individuals' faces and bodies; to be more appealing to the ideal image of other individuals in social media. Numerous studies linked this behavior with a variety of emerging psychological problems. Such as (snapchat dysmorphia) and (selfie dysmorphia); which are social media-induced dissatisfaction with natural looks [1]. When people, usually females, use images filtered and edited on social platforms, and receiving look remarks on selfies heightens the state of self-objectification, irrespective of the form of picture modification. Therefore, the more females are self-objectified, the greater will they have to share objectifying selfies on

social media in the future [2]. In the Middle East the concept of beauty changed after the introduction of television, where a bunch of women started to change their appearance using medical alterations; to be accepted in the evolving new era. Today, with the ripeness of the phase, even young girls and a decent number of young boys spend long hours on social media platforms watching beauty surgical procedure-associated material on social media, and have poor self-perspectives, thinking of undergoing cosmetic procedures [3]. Most of these plastic-surgery contents (over 60%) are entertainment-oriented, to attract as many views as possible [4]. In addition, facial filters have brought growth in the range of aesthetic processes performed. Plastic surgeons are not to be excluded from this phenomenon, knowing there are hot discussions within their circles about social media's impact on their milieu [5]. This also may contribute to the tendency of plenty of medical graduates to pursue a degree in the field with the impact it has on people they see in social media. Even though studies in the area revealed that people preferred highly qualified aesthetic surgeons [6].the reality may slightly contradict that with the famous state of plastic surgeons on the internet. In a USA-based study, it seems that social media usage among residents in general raises concern regarding the professionalism of house staff or applicants [7]. The general population on the other hand uses Instagram and Twitter as the most social media platforms where strangers can communicate, a 2022 statistic claims [8]. Clearly, these are where most of the medical/surgicalinformation is usually accumulated, as well as where the accuracy of data provided in social media accounts, controlled by physicians or non-physicians, is crucial in influencing people to take the choice of undergoing this sort of surgical procedure or not [5].

Most of the Saudi population believes that specialized cosmetic accounts on social media are helpful. And they would like to receive more information from them [9]. In controversy, a study affirmed that the practitioners' posts, especially in Instagram, are poorly adhered to the well-established photography standards. The before and after photographs the majority of clinics use to promote their are audited for photographic quality [10]. Following the COVID-19 pandemic aftermath, and the rising usage of digital conferences and schooling where people are constantly aware of how they look on cameras from a very close angle, popularity of facial surgeries, nose-job procedures in particular, has increased as well [12]. Recently, and despite being a conservative community, acceptance of plastic surgery in Saudi Arabia is increasing, especially among women [11]. Given the importance of its cosmetic branch, offering minimal-invasive procedures for appearance-related issues the patient may have [3]. However, to the best of our knowledge, there is a limited scope of studies conducted on Saudi adults with regards to their perception toward cosmetic procedures or studies that explore the extent to which social media has influenced individuals’ decisions on self-appearance change in Saudi Arabia. Therefore, the goal of this study is to determine the effects of social media on the decision to undergo cosmetic procedures among adults in Saudi Arabia.

Methods

1.1 Study Design and Setting

This research utilized a cross-sectional, quantitative survey design, with data collected from Saudi Arabian adults at one specific point via an online questionnaire. This method allowed for the practical acquisition of numerical data from a broad and geographically dispersed population. The study's reach extended across diverse regions of Saudi Arabia, capitalizing on the country's significant social media engagement to facilitate participant recruitment.

1.2 Ethical Approval

Institutional Review Board Statement: Ethical approval for this research was obtained from the Institutional Review Board (IRB) in Al-Imam Muhammad Ibn Saud Islamic University (project number 817/2025), approval date: 25/5/2025 All methods were carried out in accordance with the principles of the Declaration of Helsinki.

1.3 Participants and Sampling

The participant pool for this research consisted of adults, specifically males and females, residing in Riyadh, Saudi Arabia, within the age bracket of 18 to 50 years. This inclusive approach welcomed both Saudi citizens and non-Saudi residents who provided explicit informed consent, which was distributed to them prior to their participation. Strict exclusion criteria were applied to individuals outside the defined age range or those not residing in Riyadh. Data collection proceeded via a non-probability convenience sampling strategy, leveraging the extensive reach of popular social media platforms (such as TikTok, Instagram, X, and Snapchat) and relevant online forums within Riyadh for survey dissemination. A comprehensive sample size of 1500 participants was determined to be necessary to achieve the desired statistical power and generalizability. This calculation was based on a standard formula for estimating a population proportion at a 95% confidence level and a 5% margin of error (assuming a 50% prevalence), further adjusted upward to mitigate the impact of an anticipated 25% non-response rate, resulting in a minimum target of approximately 1537 participants.

1.4 Study questionnaire and Validation

The questionnaire was initially developed in English to align with standard survey research practices and subsequently translated into Arabic to accommodate the linguistic preferences of the target population. To ensure the accuracy and reliability of the translation, a rigorous back-translation process was conducted, wherein the Arabic version was translated back into English to verify that it faithfully represented the original content. Following translation, content validity was established by 3 plastic surgeons and one psychiatrist . This panel assessed the relevance, clarity, and comprehensiveness of each item in relation to the study's objectives. Prior to the main data collection, a pilot study was conducted with a small, representative sample of 20 participants from the target population.

The questionnaire included demographic variables such as gender, age, nationality, region, marital status, education, employment, and monthly income. Participants were also asked about their history of undergoing cosmetic procedures and whether their family members or friends had undergone such

procedures. We included six items to assess the Social Media Appearance Pressure Scale. These items assessed the appearance-related pressure, self-comparison, and cosmetic surgery consideration due to social media exposure. Items included statements such as: “I always feel a loss of confidence/attractiveness when I compare my appearance to social media celebrities,” “I might seriously consider undergoing a cosmetic procedure to enhance my appearance on social media,” and “I feel uncomfortable posting my pictures on social media without using filters.” Participants responded to these items using a Likert-type scale, where higher scores indicated greater susceptibility to social media-induced appearance concerns.

Section three explored social media engagement and its role in cosmetic procedure decisions, including daily hours spent on social media, most frequently used apps, and preferred sources for information about cosmetic procedures. Participants were also asked whether they followed plastic surgeons on social media, the number of surgeons they followed, and their main reason for doing so. Items were also included to assess the impact of social media interactions, such as the effect of likes and comments on self-perception, willingness to consult well-known plastic surgeons online, and previous experiences with virtual cosmetic surgery consultations. Finally, perceptions of social media advertising in the cosmetic surgery industry were explored, including attitudes toward its influence on clinic attractiveness and patient satisfaction.

1.5 Statistical analysis

Statistical analysis was performed using R v 4.3. Categorical variables were summarized using counts and percentages. Continuous variables were summarized using mean ± standard deviation for continuous normal variables. The median and interquartile range were used for non-normal variables. The Chi-square test of independence was conducted to assess associations between categorical variables. Effect sizes were calculated using Cramér’s V, with values of 0.1 indicating a small effect, 0.3 a medium effect, and 0.5 a large effect. A p-value of <0.05 was considered statistically significant.

Results

A total of 6465 participants completed the survey. The sample shown in **Table 1** was predominantly female (77.4%, n = 5004) and Saudi nationals (89.1%, n = 5763). The majority were aged 18–29 years (71.3%, n = 4612), with smaller proportions in the 30–39 (11.7%, n = 755), 40–49 (11.7%, n = 757), and 50+ (5.3%, n = 341) age groups. Most respondents were from the Central region (56.0%, n = 3622), followed by the Western (19.6%, n = 1270), Eastern (11.7%, n = 759), Southern (7.4%, n = 478), and Northern (5.2%, n = 336) regions.

Regarding marital status, 72.6% (n = 4696) were single, 24.4% (n = 1577) were married, 2.5% (n = 164) were divorced, and 0.4% (n = 28) were widowed. Most participants had a university education (59.6%, n = 3850), while 28.2% (n = 1823) completed high school, 5.6% (n = 360) had a PhD, 5.2% (n = 333) had an MSc, 1.1% (n = 70) had middle school education, and 0.5% (n = 29) had a diploma.

More than half of the respondents were students (56.8%, n = 3671), while others worked in the education sector (14.2%, n = 921), healthcare (10.8%, n = 700), government (5.8%, n = 376), private sector (5.9%, n = 381), or were unemployed (5.2%, n = 339), retired (1.0%, n = 67), or business owners (0.2%, n = 10). Monthly income varied, with 32.7% (n = 2111) earning 10,000–20,000 SAR, 30.2% (n = 1950) earning 3000–10,000 SAR, 26.6% (n = 1720) earning more than 20,000 SAR, and 10.6% (n = 684) earning less than 3000 SAR.

A total of 12.2% (n = 791) of respondents had previously undergone a cosmetic treatment or procedure, with a significantly higher proportion among those who previously underwent a cosmetic procedure (90.1%, n = 713) compared to those who did not (35.0%, n = 1987, $p < 0.001$, Cramér's V = 0.37). Gender was significantly associated with interest ($p < 0.001$, Cramér's V = 0.18), with females showing greater interest (46.4%, n = 2324) compared to males (25.7%, n = 376). Age also showed a significant association ($p < 0.001$, Cramér's V = 0.14), with the highest interest observed among those aged 30–39 (55.9%, n = 422) and 50+ (51.0%, n = 174), while the lowest was among 18–29-year-olds (37.5%, n = 1731).

Marital status was significantly associated ($p < 0.001$, Cramér's V = 0.13), with widowed (82.1%, n = 23) and divorced (60.4%, n = 99) participants showing the highest interest, compared to singles (38.0%, n = 1786). Education was also significant ($p < 0.001$, Cramér's V = 0.10), with PhD holders (56.4%, n = 203) and middle school graduates (58.6%, n = 41) showing higher interest than those with a diploma (34.5%, n = 10). Employment was significantly associated with interest ($p < 0.001$, Cramér's V = 0.18), with business owners (70.0%, n = 7), those in the education sector (54.5%, n = 502), and government employees (55.9%, n = 210) reporting higher interest, while students had the lowest (34.5%, n = 1267). Monthly income had a weak but significant association ($p < 0.001$, Cramér's V = 0.06), with those earning more than 20,000 SAR showing slightly higher interest (44.8%, n = 771) compared to those earning less than 3,000 SAR (35.7%, n = 244). Among participants who knew someone who had undergone cosmetic surgery, a higher proportion expressed interest in undergoing a procedure themselves (56.1%, n = 1447), compared to those who were uncertain (35.7%, n = 337) or did not know anyone who had undergone cosmetic surgery (31.2%, n = 916).

The most commonly reported procedure among participants presented in **(Figure 1a)** was filler injections (28.3%, n = 664), followed by rhinoplasty (26.7%, n = 626) and Botox (20.1%, n = 472). Less frequently reported procedures included body sculpting (12.8%, n = 300), other procedures (8.8%, n = 207), and breast reduction (3.4%, n = 80).

Among family members or friends shown in **(Figure 1b)**, filler injections were also the most reported procedure (36.9%, n = 989), followed by rhinoplasty (25.4%, n = 680) and Botox (15.5%, n = 415). Body sculpting (11.9%, n = 318), other procedures (8.2%, n = 219), and breast augmentation (2.1%, n = 56) were less frequently reported. Percentages represent the proportion of individuals who underwent each procedure within the respective groups.

A statistically significant association was observed in **Table 2** between interest in undergoing a cosmetic procedure and various social media-related factors ($p < 0.001$ for most variables). The effect sizes ranged from small to moderate, with the strongest association found for the main reason to follow plastic surgeons on social media (Cramér's V = 0.41), followed by following plastic surgeons on social media in general (Cramér's V = 0.35). Among social media usage patterns, spending more than five hours daily on social media was associated with greater interest in undergoing a cosmetic procedure (47.2%, n = 1009) compared to those using it for less than two hours (41.2%, n = 378, Cramér's V = 0.08). Snapchat (51.0%, n = 597) and TikTok (50.2%, n = 820) users reported the highest levels of interest, while YouTube users were the least likely to express interest (26.4%, n = 121, Cramér's V = 0.18).

The majority of respondents felt pressured by social media regarding their appearance presented in **Figure 2**. Over half (57–76%) reported discomfort when posting unfiltered photos, experienced pressure to change their appearance, or felt a loss of confidence when comparing themselves to social media celebrities. However, despite this perceived pressure, the willingness to undergo cosmetic procedu zres remained low, as 88–90% rejected the idea of cosmetic enhancements influenced by social media trends. These findings suggested that while social media had an impact on self-perception, it did not strongly drive decisions toward cosmetic interventions. Among participants who posted their pictures on social media (n = 1422), 32.6% (n = 464) reported being affected by the number of likes and comments, while 13.5% (n = 192) remained neutral, and 53.9% (n = 766) stated that they were not affected.

Figure 3 showes respondents interested in undergoing a cosmetic procedure were more likely to report social media-related appearance pressures compared to those not interested. A higher proportion of interested participants felt a loss of confidence when comparing themselves to social media celebrities (19.2% vs. 7.2%, $P < 0.001$), believed they would be happier if their appearance resembled a social media celebrity (16.8% vs. 7.2%, < 0.001), and considered undergoing cosmetic surgery if it was popular among social media celebrities (10.1% vs. 1.3%, < 0.001). Similarly, a greater percentage expressed willingness to enhance their appearance for social media (9.4% vs. 2.0%, < 0.001) and felt uncomfortable posting unfiltered pictures (35.3% vs. 14.2%, < 0.001). Those interested were also more likely to feel pressured to change their appearance after seeing others on social media (23.7% vs. 7.9%, < 0.001).

A majority of respondents (61.6%) in **Table 3** were not willing to consult a well-known plastic surgeon on social media and only 4.1% had ever requested a plastic surgery consultation through virtual clinics, with 77.8% of those who did reporting it as beneficial. More than half (51.2%) believed that plastic surgery clinics appear more attractive and satisfying when active on social media, while 22.0% disagreed, and 26.8% remained neutral.

Regarding online searches, 22.3% had looked up a plastic surgeon's qualifications, while the majority (77.7%) had not. Opinions on social media advertising of cosmetic procedures were divided, with 38.8% against it, 47.3% indifferent, and 13.9% in support.

Discussion

This study explored how social media influences the desire for cosmetic procedures among 6,465 adults in Riyadh, Saudi Arabia, revealing a striking digital paradox. Although 57–76% of respondents reported experiencing pressure from social media to alter their appearance, 88–90% ultimately rejected the idea of undergoing cosmetic procedures influenced by social media trends. This phenomenon highlights a crucial dissonance between psychological influence and behavioral outcomes.

The underlying mechanisms appear to stem from internalized beauty norms that reshape self-perception without necessarily translating into surgical decisions. This finding aligns with Alhusaini et al. (2022), who reported that despite high social media exposure and body image dissatisfaction among Saudis, the overall inclination toward cosmetic surgery remained low, with a mean Acceptance of Cosmetic Surgery Scale (ACSS) score of only 3.36/10 [13]. Similarly, Alkhathami et al. (2023) found that 86.1% of young Saudi women had not undergone any procedures, even though many cited social media as a key driver of appearance dissatisfaction[14]. These findings echo the psychological model described by Vendemia and DeAndrea (2021), which suggests that women's engagement in digital photo modification can heighten self-objectification and appearance-based anxiety regardless of procedure intentions [2].

However, this apparent reluctance should not be mistaken for lack of impact. Mironica et al. (2024) found that 26-80% of participants across 25 studies reported social media impacting their self-perception, with over 4 hours of daily exposure linked to increased symptoms of body dysmorphic disorder [15]. The psychological burden reflects growing mental health concerns consistent with regional patterns. Ateq et al. (2024) found that 24.4% of Saudi adults met criteria for body dysmorphic disorder, with 29% of those individuals spending 4-7 hours daily on Instagram and Snapchat [16]. This widespread appearance pressure without resolution suggests that while social media creates profound psychological influence, cultural inhibition, critical awareness, or access barriers may moderate the translation to surgical action, especially in conservative societies where the gap between internal desire and social acceptability remains wide [17,18].

A significant proportion of respondents (57%) expressed discomfort in posting unfiltered photos on social media, and 64% reported losing confidence when comparing themselves to celebrities. This reflects the pervasive role of "filter culture" in shaping digital self-perception, where visual alterations foster unrealistic beauty benchmarks. Prior studies in Saudi Arabia confirm this pattern, with one study finding that 42% of women reported deciding to undergo facial changes after using Snapchat filters, and another reporting that 60% of selfie-taking users who used filters were more likely to consider cosmetic surgery [9,19]. These findings are consistent with global psychological theories. A recent study demonstrated that exposure to filtered images and idealized content significantly influences motivations for aesthetic surgery by promoting digitally enhanced beauty standards [20]. Mortada and colleagues found that plastic surgeons increasingly encounter patients requesting procedures to match their filtered appearance [21]. However, Nerini and colleagues found that while both groups found altered images equally attractive, only those unaware of digital enhancement showed increased acceptance of surgery, suggesting that awareness of manipulation may provide some protection against its influence [22].

This distinction underlines the emerging "digital-reality gap," where virtual ideals profoundly affect how individuals perceive themselves but remain disconnected from real-world decisions. A study in 2019 demonstrated that viewing images of females who had undergone cosmetic enhancements increased desire for cosmetic surgery among young women, especially those spending significant time on social media [23]. However, Alhadlaq found that while augmented reality filters increased desire for aesthetic changes, only a minority proceeded with surgical interventions, particularly in conservative societies where appearance modification may still face social or religious reservations [24].

Interest in undergoing cosmetic procedures was highest among individuals aged 30–39 years (55.9%) compared to 18–29-year-olds (37.5%), challenging conventional assumptions about digital natives being most susceptible to social media influence. This pattern may reflect a balance between increased financial stability and maturing aesthetic concerns in individuals entering their 30s. Similar age-related trends have been reported in other studies. Alkhathami found that acceptance of cosmetic procedures was significantly associated with age, with older participants demonstrating higher acceptance scores [14]. Di Gesto and colleagues observed that while younger individuals showed higher engagement with Instagram-based beauty content, actual procedural acceptance was more pronounced among those with greater life experience and financial capacity [25]. Conboy and Mingoia found that while social networking site use was associated with lower self-compassion among young Australian women, the relationship with cosmetic surgery attitudes was moderated by age and financial resources [26].

Conversely, some studies highlight greater susceptibility among younger individuals to social media influence, even if this doesn't translate to immediate action. Li found that online selfie behavior and cosmetic surgery consideration among teenage girls was mediated by appearance comparisons and body dissatisfaction [27]. The contrast between psychological influence in youth and procedural commitment in adulthood may reflect a temporal gap between the development of aesthetic dissatisfaction and the feasibility of acting on it, with factors such as cost, workplace acceptability, and concerns about long-term outcomes contributing to delayed decision-making among younger users.

The current study found that 46.4% of females expressed interest in undergoing cosmetic procedures, compared to 25.7% of males, indicating substantial gender-based differences. This disparity may be partially attributed to sociocultural expectations regarding female appearance in Saudi society, where women often face greater scrutiny concerning beauty standards. Saudi women were more likely than men to be influenced by social media beauty trends, particularly when using visual platforms like Snapchat [9]. Almudimeegh found that women were more likely than men to engage with dermatologists and beauty influencers on social media, reporting higher rates of cosmetic procedure consideration [28]. Suwayyid found that 72% of female participants felt pressured to conform to beauty standards promoted on social media platforms[29].

However, emerging research suggests that gender differences in cosmetic surgery consideration may be evolving. Truasheim and Bonell found that passive social media engagement among men was positively related to consideration of cosmetic surgery, with 13.7% of all surgical cosmetic procedures worldwide

now performed on men [30]. Another study noted that while women remain more susceptible to appearance-focused social media pressure, men increasingly engage with fitness and body modification content that can influence aesthetic desires [31]. Not all studies report consistent gender differences. Sindi found no significant association between gender and desire for cosmetic procedures in their Makkah-based study, attributing this to conservative community norms limiting behavioral expression across both sexes [18]. These variations may reflect regional differences in gender norms, religious conservatism, and differing levels of digital engagement between male and female participants.

The type of social media platform used significantly influenced interest in cosmetic procedures. Users of visual and entertainment-heavy platforms such as Snapchat (51.0%) and TikTok (50.2%) showed markedly higher interest in cosmetic enhancements compared to only 26.4% among those who primarily used YouTube. This pattern likely reflects the nature of content consumed—Snapchat and TikTok prioritize rapid, visually filtered content that emphasizes aesthetic appeal, while YouTube more often features longer, educational videos that may include procedural risks and recovery processes. Alghamdi found that users of TikTok and Instagram were more exposed to promotional content from beauty influencers and surgeons, with such exposure correlating positively with cosmetic ervention interest [32]. Chen and colleagues demonstrated that among social media applications, Snapchat was associated with increased acceptance of surgery, while Instagram was linked to increased consideration of surgery, suggesting platform-specific psychological mechanisms [33].

The algorithmic nature of these platforms plays a crucial role in shaping cosmetic attitudes. A study analyzed 2 million plastic surgery posts across social media platforms and found that TikTok generated more prominent total engagement than Instagram, with content specifically designed to normalize aesthetic enhancements. Participants who reported spending five or more hours daily on social media were more likely to express interest in cosmetic procedures (47.2%), suggesting a dose-response relationship between exposure time and appearance-related decision-making [34]. Rahman found that heavy social media use creates a reinforcement loop between aesthetic medicine engagement, self-perception changes, and consideration of repeat procedures[35]. Following cosmetic surgeons on social media emerged as one of the strongest predictors of interest in aesthetic procedures, with 65.4% of those who follow surgeons reporting interest, compared to only 29.4% among those who do not.

Alghamdi noticed that participants who followed plastic surgeons were significantly more likely to express procedural intent [32]. Cho et al. (2020) revealed that plastic surgeons increasingly use social media platforms for practice building, with 92.9% maintaining at least one social media account [36]. However, Vardanian cautioned that the boundary between education and marketing is often blurred in surgical social media presence, which can lead to misinformed decisions [37]. The influence of personal networks was equally evident, with 56.1% of participants expressing interest in cosmetic procedures if they knew someone who had undergone one, compared to only 31.2% among those who did not. This supports the concept of social proof—seeing peers engage in a behavior normalizes and validates cosmetic decisions. Seekis and Barker found that engagement with beauty content on social media

mediated the relationship between appearance comparison and cosmetic surgery consideration, particularly when combined with peer endorsement [38].

Despite the conservative cultural environment in Saudi Arabia, 41.8% of respondents expressed interest in cosmetic procedures, indicating a possible shift in generational attitudes toward aesthetic modification. This represents a significant cultural evolution, where exposure to global beauty standards through social media challenges traditional norms and values. Timraz et al noted that patients in the Middle East increasingly prioritize aesthetic appearance, often reconciling religious or cultural constraints with personal aspirations [17]. Research indicates that Saudi Arabia has seen a substantial increase in cosmetic procedure acceptance. According to International Society of Aesthetic Plastic Surgery data cited by Ateq, Saudi Arabia ranks 29th globally among countries with the highest rates of cosmetic procedures, with a 58% increase in procedures between 2012 and 2016 [16]. This cultural shift is particularly pronounced among educated populations, with our study finding that PhD holders showed the highest interest (56.4%).

However, other studies offer a more cautious interpretation. Sindi et al. (2023) reported that despite social media exposure, a substantial portion of Makkah residents rejected cosmetic procedures due to religious or ethical concerns. A study in Jazan found significant regional variations in acceptance rates across Saudi Arabia. The interest expressed by many respondents may therefore not necessarily indicate imminent procedural action, but rather reflect changing perceptions of what is acceptable, desirable, or discussable in Saudi society [39].

In this study, 40.6% of participants preferred obtaining cosmetic procedure information from social media rather than from medical professionals or official healthcare sources. This reliance on digital platforms reflects a broader shift in information-seeking behavior, where accessibility, peer testimonials, and visual content often take precedence over clinical credibility. Alghamdi similarly reported that a substantial proportion of Saudi women turned to Instagram and TikTok for aesthetic guidance [32]. However, concerns regarding accuracy and completeness of information remain paramount as social media platforms often blur the line between health education and advertisement, which may lead to biased or incomplete understanding of procedural risks and benefits [28].

The growing influence of social media on cosmetic surgery decisions among Saudi women highlights a notable discrepancy. While platforms like Snapchat and Instagram significantly shape perceptions of beauty and cosmetic expectations, direct engagement with certified healthcare professionals remains limited. Recent data indicate that while 55.7% of plastic surgeons in Saudi Arabia use social media, usage is more prevalent among those in private practice and aesthetic specialties, reflecting a commercially driven rather than educational orientation [21]. Similarly, only 38.2% of surgeons report using social platforms for professional advancement, with just 11.8% sharing patient images—highlighting regulatory and ethical constraints that likely limit proactive outreach [40]. Patients, meanwhile, appear highly responsive to visual cues such as before-and-after photos and surgeon advertisements. In one cross-sectional study, 42.6% of women cited surgeon self-promotion and 38%

pointed to improved selfies as motivating factors for considering facial cosmetic surgery [41]. Despite this, formal virtual consultations remain low, suggesting a missed opportunity to channel interest into ethical, informed patient decision-making. Cultural and legal factors also shape provider behavior. Concerns over patient confidentiality and the lack of clear social media guidelines contribute to surgeons' cautious approach [42]. Healthcare professionals emphasize the need for national regulations to clarify boundaries and support ethical online communication [43].

Limitations and Future Directions

Despite its valuable contributions, this study has several limitations. First, its cross-sectional design prevents the establishment of causal relationships between social media advertising and the desire for cosmetic surgery. Future longitudinal studies are essential to ascertain the temporal sequence and causal pathways of these associations. Second, the reliance on self-reported data introduces the potential for social desirability bias, especially concerning sensitive topics such as body image and cosmetic procedures.

Third, the application of a non-probability convenience sampling method, primarily via social media platforms, may restrict the generalizability of the findings to the entire adult population of Riyadh or Saudi Arabia. Finally, while "social media advertising" was explored broadly, specific typologies, frequencies, and exposure levels to various forms of cosmetic advertising were not granularly differentiated. Further research detailing these nuances could yield deeper insights into their varied impacts and help develop more targeted interventions.

Future research should focus on longitudinal designs to establish causality, examine cultural and regional variations in social media influence on cosmetic surgery decisions, and develop intervention strategies to promote healthy body image in the digital age. Additionally, studies examining the effectiveness of different approaches to healthcare provider communication in digital spaces could help bridge the gap between social media engagement and professional medical consultation.

Conclusion

Social media creates a psychological burden regarding appearance without driving actual cosmetic surgery behavior among Saudi adults. While digital platforms influence self-perception and generate appearance pressure, cultural, financial, and practical barriers prevent this from translating into surgical action, revealing that online influence operates differently than traditional predictors of cosmetic surgery uptake.

Declarations

The authors declare that they have no additional data or supplementary materials to provide.

Conflict of Interest:

The authors declare no conflicts of interest in relation to this study.

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Author Contribution

Lama A. Alkhwildi: Conceptualization, Methodology, Investigation, Data curation, Writing – original draft, Project administration, Corresponding author.Yara K. Alwathnani: Investigation, Data curation, Writing – original draft.Abdulaziz A. Alkhwildi: Investigation, Data curation, Writing – review & editing.Mohammed A. Alkhwildi: Investigation, Data curation, Writing – review & editing.Shahad K. Alghanem: Investigation, Data curation, Writing – review & editing.Khalid A. Alshiekh: Investigation, Data curation, Writing – review & editing.Salman S. Alanazi: Methodology, Writing – review & editing.Abdulaziz S. Almodumeegh: Supervision, Validation, Writing – review & editing.Amr Youssef Arkoubi: Supervision, Validation, Resources, Writing – review & editing.

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Tables

Table 1. Descriptive statistics for the study sample

	Interest in undergoing cosmetic procedure				Cramer V
	[ALL]	No	Yes	p.overall	
	N=6465	*N=3765*	*N=2700*		
Gender:				<0.001	0.18
Female	5004 (77.4%)	2680 (53.6%)	2324 (46.4%)		
Male	1461 (22.6%)	1085 (74.3%)	376 (25.7%)		
Age:				<0.001	0.14
18-29	4612 (71.3%)	2881 (62.5%)	1731 (37.5%)		
30-39	755 (11.7%)	333 (44.1%)	422 (55.9%)		
40-49	757 (11.7%)	384 (50.7%)	373 (49.3%)		
50+	341 (5.27%)	167 (49.0%)	174 (51.0%)		
Nationality:				0.705	0.01
Non-Saudi	702 (10.9%)	414 (59.0%)	288 (41.0%)		
Saudi	5763 (89.1%)	3351 (58.1%)	2412 (41.9%)		
Region:				<0.001	0.09
Central	3622 (56.0%)	2013 (55.6%)	1609 (44.4%)		
Eastern	759 (11.7%)	445 (58.6%)	314 (41.4%)		
Northern	336 (5.20%)	197 (58.6%)	139 (41.4%)		
Southern	478 (7.39%)	351 (73.4%)	127 (26.6%)		
Western	1270 (19.6%)	759 (59.8%)	511 (40.2%)		
Marital status:				<0.001	0.13
Divorced	164 (2.54%)	65 (39.6%)	99 (60.4%)		

Married	1577 (24.4%)	785 (49.8%)	792 (50.2%)		
Single	4696 (72.6%)	2910 (62.0%)	1786 (38.0%)		
Widowed	28 (0.43%)	5 (17.9%)	23 (82.1%)		
Education:				<0.001	0.10
Middle school	70 (1.08%)	29 (41.4%)	41 (58.6%)		
High school	1823 (28.2%)	1167 (64.0%)	656 (36.0%)		
Diploma	29 (0.45%)	19 (65.5%)	10 (34.5%)		
MSc	333 (5.15%)	182 (54.7%)	151 (45.3%)		
PhD	360 (5.57%)	157 (43.6%)	203 (56.4%)		
University	3850 (59.6%)	2211 (57.4%)	1639 (42.6%)		
Employment:				< 0.001	0.18
Business owner	10 (0.15%)	3 (30.0%)	7 (70.0%)		
Education sector	921 (14.2%)	419 (45.5%)	502 (54.5%)		
Government sector	376 (5.82%)	166 (44.1%)	210 (55.9%)		
Healthcare sector	700 (10.8%)	364 (52.0%)	336 (48.0%)		
Private sector	381 (5.89%)	181 (47.5%)	200 (52.5%)		
Retired	67 (1.04%)	47 (70.1%)	20 (29.9%)		
Student	3671 (56.8%)	2404 (65.5%)	1267 (34.5%)		
Unemployed	339 (5.24%)	181 (53.4%)	158 (46.6%)		
Monthly income:				<0.001	0.06

<3000	684 (10.6%)	440 (64.3%)	244 (35.7%)		
3000-10000	1950 (30.2%)	1105 (56.7%)	845 (43.3%)		
10000-20000	2111 (32.7%)	1271 (60.2%)	840 (39.8%)		
>20000	1720 (26.6%)	949 (55.2%)	771 (44.8%)		
Previosuly underwent cosmetic treatment/procedure:				<0.001	0.37
No	5674 (87.8%)	3687 (65.0%)	1987 (35.0%)		
Yes	791 (12.2%)	78 (9.86%)	713 (90.1%)		
Family member/friends underwent cosmetic treatment/procedure:				<0.001	0.28
I don’t know	945 (14.6%)	608 (64.3%)	337 (35.7%)		
No	2939 (45.5%)	2023 (68.8%)	916 (31.2%)		
Yes	2581 (39.9%)	1134 (43.9%)	1447 (56.1%)		

Data were summarized using counts and percentages. Chi-square tests were used to determine the association between demographic characteristics and interest in undergoing a cosmetic procedure. **Cramér’s V** indicates the strength of association. All percentages reflect the proportion within each demographic group.

Table 2. Association between the use of social media and interest in undergoing cosmetic surgery/treatment

	Interest in undergoing cosmetic procedure				
	[ALL]	No	Yes	P	Cramer V
	N=6465	*N=3765*	*N=2700*		
Daily hours spent on social media:				<0.001	0.08
<2 hours	917 (14.2%)	539 (58.8%)	378 (41.2%)		
2-5 hours	3410 (52.7%)	2097 (61.5%)	1313 (38.5%)		
>5hours	2138 (33.1%)	1129 (52.8%)	1009 (47.2%)		
Most used app:				<0.001	0.18
Facebook	21 (0.32%)	11 (52.4%)	10 (47.6%)		
Instagram	1636 (25.3%)	1106 (67.6%)	530 (32.4%)		
Snapchat	1171 (18.1%)	574 (49.0%)	597 (51.0%)		
Telegram	37 (0.57%)	32 (86.5%)	5 (13.5%)		
Tiktok	1632 (25.2%)	812 (49.8%)	820 (50.2%)		
Twitter	821 (12.7%)	465 (56.6%)	356 (43.4%)		
Whatsapp	688 (10.6%)	427 (62.1%)	261 (37.9%)		
Youtube	459 (7.10%)	338 (73.6%)	121 (26.4%)		
Preferred source for information about cosmetic treatments/procedures:				<0.001	0.11
Family/Friends	87 (1.35%)	46 (52.9%)	41 (47.1%)		
Friends/Family	17 (0.26%)	14 (82.4%)	3 (17.6%)		

Google + Internet browsing	2944 (45.6%)	1804 (61.3%)	1140 (38.7%)		
Medical resources	226 (3.50%)	155 (68.6%)	71 (31.4%)		
Physicians	335 (5.19%)	236 (70.4%)	99 (29.6%)		
Social media platforms	2619 (40.6%)	1370 (52.3%)	1249 (47.7%)		
TV	222 (3.44%)	127 (57.2%)	95 (42.8%)		
Follow any plastic surgeons on social media:				<0.001	0.35
No	4251 (65.8%)	3000 (70.6%)	1251 (29.4%)		
Yes	2214 (34.2%)	765 (34.6%)	1449 (65.4%)		
Number of followed plastic surgeons:				0.001	0.08
1 to 5	1998 (90.8%)	715 (35.8%)	1283 (64.2%)		
5 to 10	149 (6.77%)	36 (24.2%)	113 (75.8%)		
>10	54 (2.45%)	10 (18.5%)	44 (81.5%)		
Main reason to follow a plastic surgeon on social media: (N = 2200)				<0.001	0.41
For educational or professional purposes	601 (27.3%)	336 (55.9%)	265 (44.1%)		
For fun	716 (32.5%)	296 (41.3%)	420 (58.7%)		
Other	78 (3.55%)	44 (56.4%)	34 (43.6%)		
To gather information in case of undergoing a cosmetic procedure in the future	805 (36.6%)	80 (9.94%)	725 (90.1%)		

Data were summarized using counts and percentages. Chi-square tests were used to determine the association between demographic characteristics and interest in undergoing a cosmetic procedure. **Cramér's V** indicates the strength of association. All percentages reflect the proportion within each demographic group.

Table 3. Engagement with Plastic Surgery Information on Social Media Influence

	[ALL]
	N=6465
Willing to consult a well-known plastic surgeon on social media:	
Neutral	1522 (23.5%)
No	3985 (61.6%)
Yes	958 (14.8%)
Ever requested a plastic surgery consultation through virtual (remote) clinics:	
No	6201 (95.9%)
Yes	264 (4.08%)
Did you benefit from the consultation?: (N = 263)	
No	58 (22.2%)
Yes	203 (77.8%)
Cosmetic surgery clinics appear more attractive and satisfying to their patients if they are active on social media:	
Neutral	1735 (26.8%)
No	1423 (22.0%)
Yes	3307 (51.2%)
Ever searched online for the qualifications, academic degree, or experience of a plastic surgeon:	
No	5025 (77.7%)
Yes	1440 (22.3%)
Support the use of social media for advertising cosmetic procedures:	
I am against it	2509 (38.8%)

I do not mind it	3056 (47.3%)
I support it	900 (13.9%)
Data were summarized using counts and percentages	

Figures

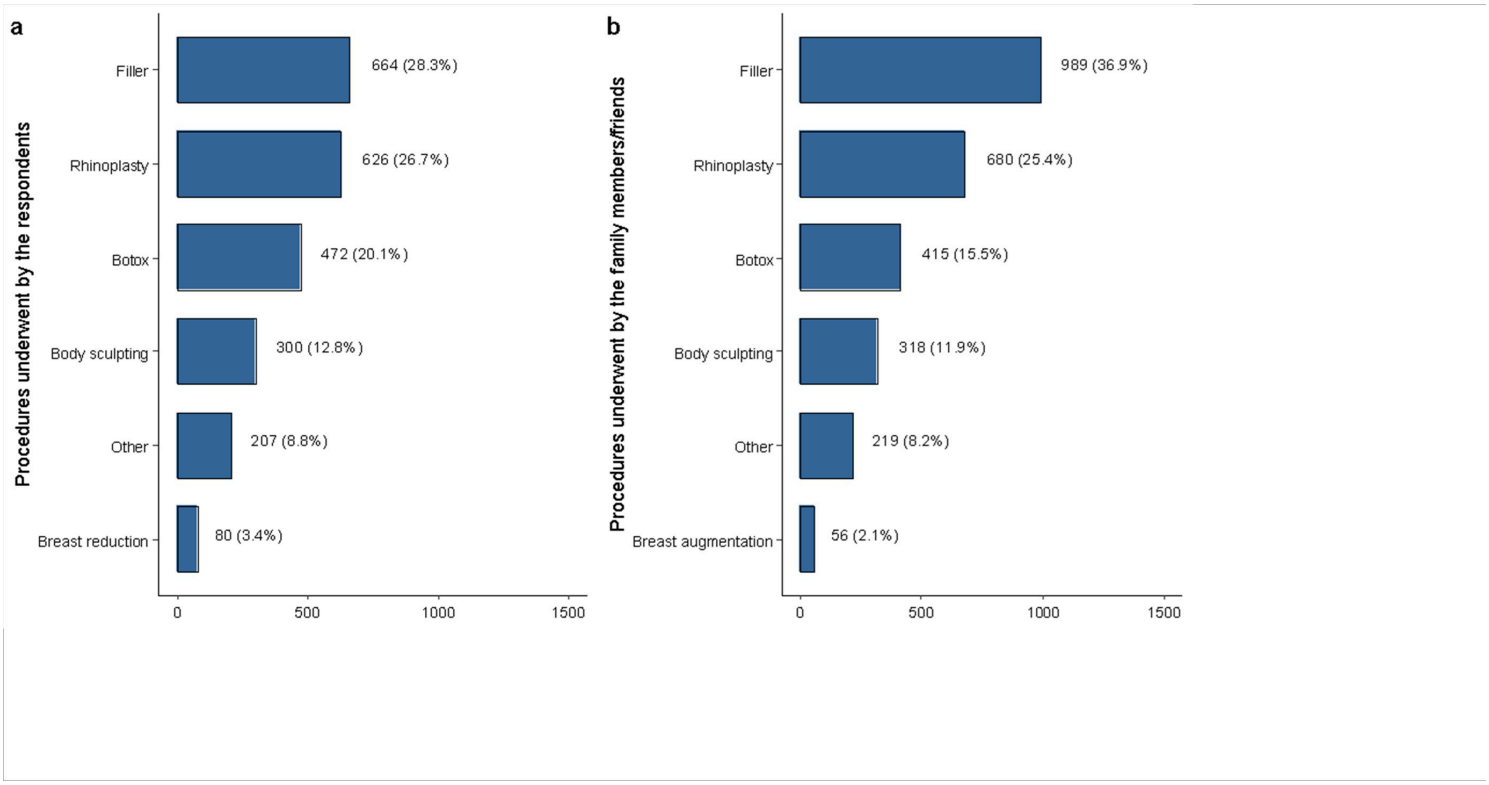


Figure 1

Cosmetic procedures/treatments underwent by a) Participants b) Family members/Friends

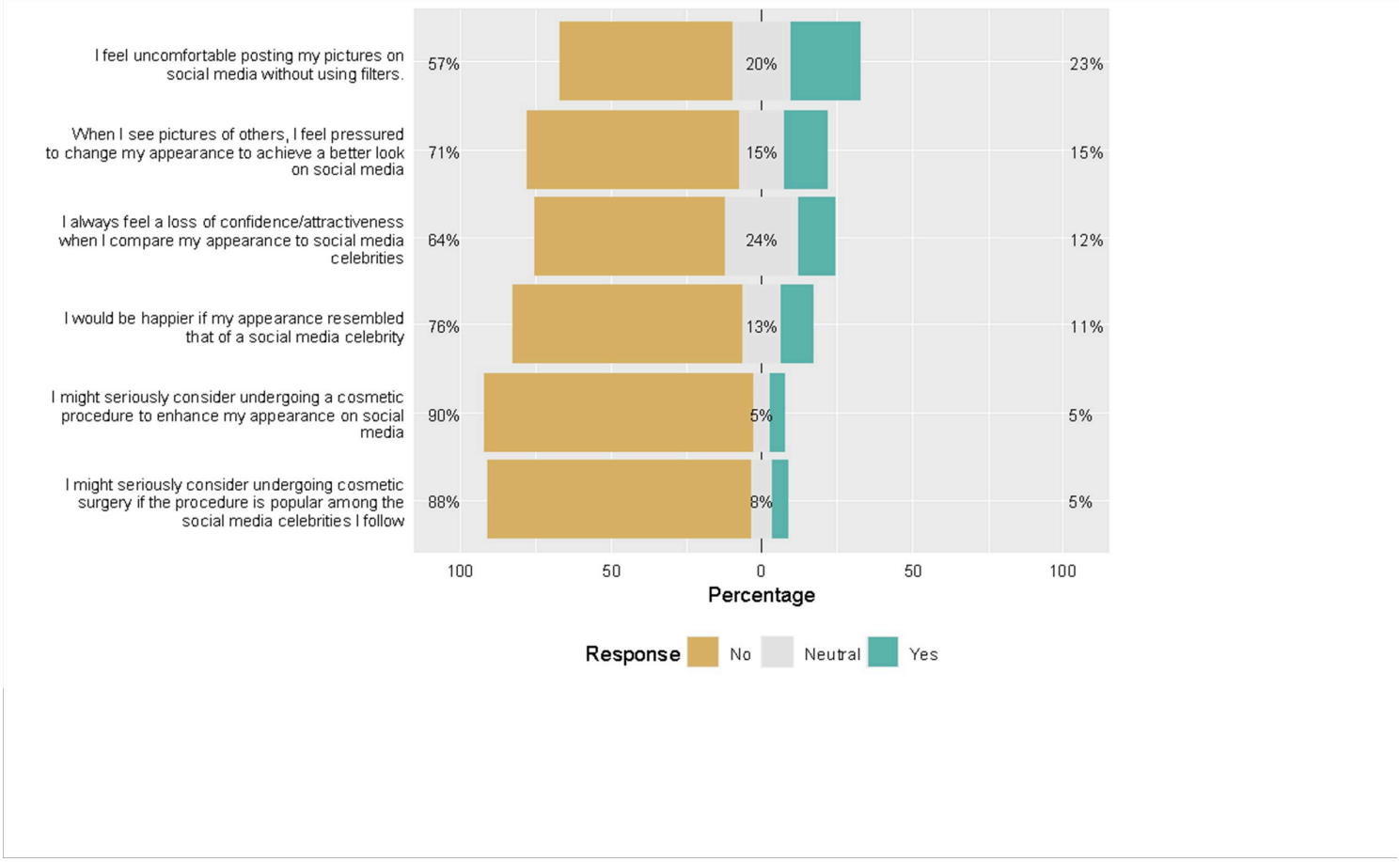


Figure 2

Perceived influence of social media on appearance and willingness to undergo cosmetic procedures

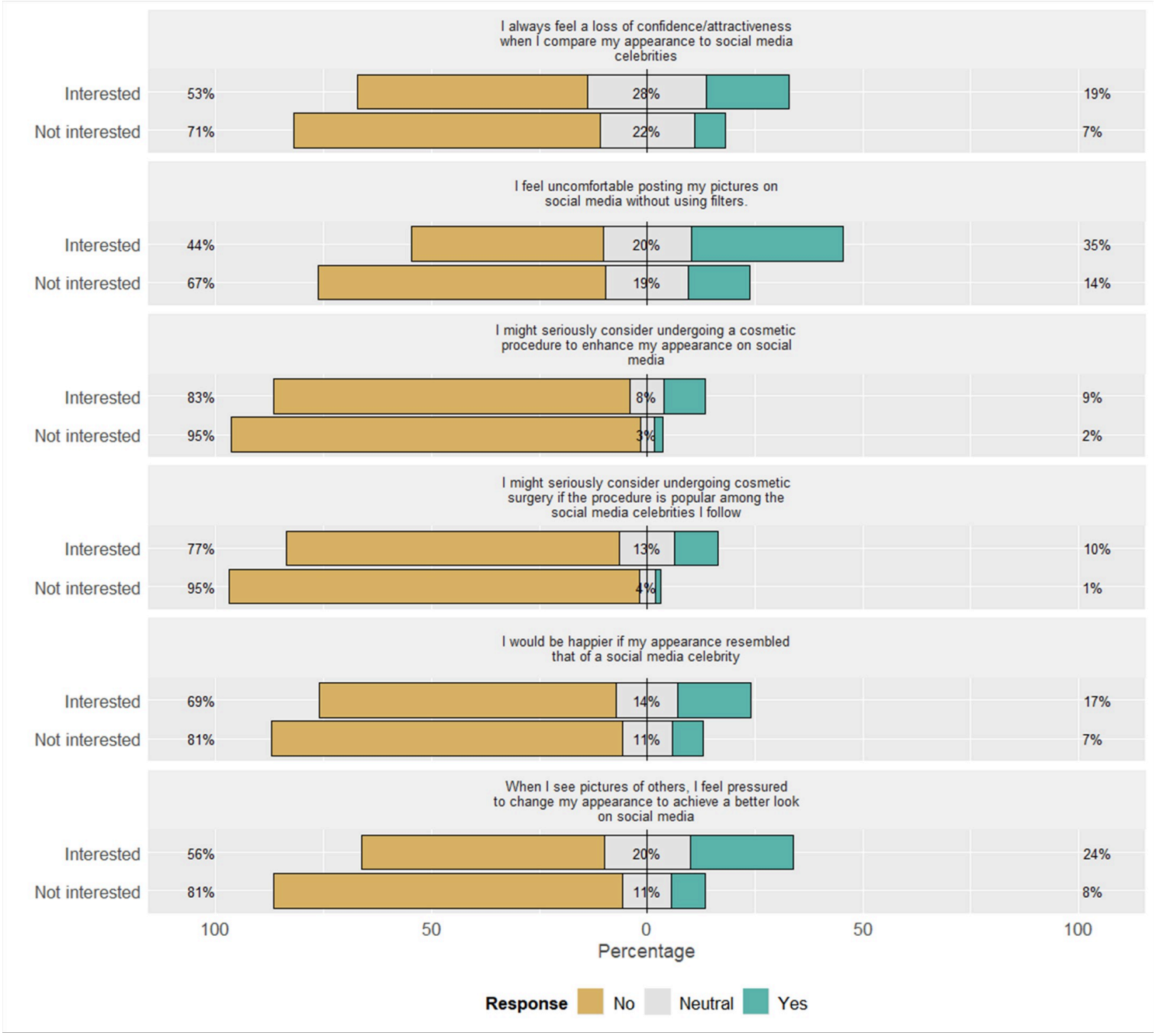


Figure 3

Social Media Appearance Pressure and Interest in Undergoing Cosmetic Procedures