

Knowledge and attitude toward cosmetic procedures and their consequences among Saudi University Students

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ABSTRACT

Cosmetic procedures are increasingly popular among young adults, driven by social media and fashion trends. This study examines the knowledge and attitudes of Saudi university students towards these procedures and their consequences. A cross-sectional design was employed, surveying 430 students in Riyadh using an online questionnaire. Data were analyzed using descriptive statistics to identify trends in awareness, motivations, and experiences related to cosmetic procedures. The results indicated high awareness (86.51%) of cosmetic procedure consequences, with social media significantly influencing decisions (60%). Common non-surgical procedures recognized included filler injections and Botox. Despite awareness, gaps in understanding long-term risks persisted. The majority of the students dealt with post-procedural effects using ice packs and over-the-counter pain relief medications. Compared with global trends, the results indicate that the countries need to enhance their educational efforts. Social media plays a part which asking for the proper or healthy spreading of beauty standards in the community. It is advised to improve the educational programs and minimize the informed consent issues to emphasize the importance of students' decisions about cosmetic procedures and to maximize the awareness of the consequences of such decisions. More studies should be done in the future on these trends to modify the needed interventions.

Keywords: Cosmetic procedures awareness, Saudi university students, Social media influence, Non-surgical treatments

Introduction

Cosmetic surgery, earlier considered an extravagance, has gradually entered society and has become popular, especially among students who are opting for procedures to enhance their appearance. The increase in interest in these procedures calls for a need to establish their frequency, reasons, and outlooks, particularly among university students, who are among the target group of consumers of aesthetic enhancements [1]. This target market is special because their decision to undergo cosmetic

treatment may be triggered by a combination of psychological, social, and cultural factors [1, 2].

Cosmetic procedures have increased steadily in the recent past, and this has led to the procedures becoming more popular and widely accepted all over the world, including in the Middle East. In 2023, approximately 34.9 million cosmetic surgeries were performed around the world, and the countries opted for less invasive procedures such as botulinum toxin injections and dermal fillers [3]. This is especially the case among the youth, including university students, who consider the enhancements as a way to boost their acceptability in society [4]. The reasons for the popularity of cosmetic procedures among young adults are largely determined by the depiction of beauty standards in the media and the role of social media, which is marked by pressure from friends and celebrities as well as advertising [5, 6]. Among the findings, about 55% of the surgeons have stated that patients undergo cosmetic procedures to improve their selfies and online photos [3, 4]. In Saudi Arabia, the level of social media usage, together with attitudes towards beauty, plays a critical role in the readiness of young adults to get cosmetic procedures [7].

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In addition, the viewpoint towards cosmetic procedures and their embrace is deeply connected with cultural and social attitudes. Thus, in countries like Saudi Arabia, where social pressures and religious beliefs are very important, the decision to have cosmetic surgery is much more intricate [8, 9]. While cosmetic procedures are relatively tolerated in society, they are done in the dark as there are cultural mandates of humility and the notion of 'perfect' looks, which are Eurocentric [10].

However, there is a significant lack of empirical literature evidence available as to their risks and negative outcome aspects regarding the possible medical and psychological implications of these procedures [11]. Most young people are unaware of the potential negative attitude that they might develop because of the procedure, and if this occurs, regret and further psychological issues such as body dysmorphic disorder may affect university students [12]. This lack motivates the research interest, focusing on the extent of knowledge and perception towards cosmetic procedures in this segment.

This research seeks to fill the above gap by assessing the knowledge and perception of Saudi university students about cosmetic procedures. In particular, it aims to define which of them are the most utilized, what drives these people, and how many of them understand the possible outcomes. This research may have implications for policymakers and educators in Saudi Arabia, to help them formulate intervention strategies that will enable the informed decision-making of university students on cosmetic procedures. As the usage of cosmetic procedures increases in the Saudi educational context, one has to consider aspects of culture, social roles, and psychology that this study seeks to investigate to better understand how cosmetic procedures fit within Saudi culture and society [12, 13].

Material and Method

The method used in this particular study is cross-sectional, and the purpose entails assessing the understanding and perceptions about cosmetic treatments among numerous university students in Riyadh, Saudi Arabia. Focusing on a population that is highly responsive to trends, this design allows one to take a 'photographic' look at a specific segment of students at a given period in time and consider some of the views they have internalized, thanks to various social media influencers.

The target population is students from many universities in Riyadh, Saudi Arabia because they will be able to give several different perspectives on cosmetic procedures. For practical reasons and owing to the ease of accessing the target population, convenience sampling is used. Nevertheless, it offers enough information to meet the exploratory objectives of the study by recruiting a large sample of students.

The data was collected using an online survey in the form of a questionnaire, which was administered using Google Drive. This method was selected because it is quick and ensures that the participant's responses are not disclosed to other people. This questionnaire aimed at assessing the level of knowledge,

attitudes, and previous experience that students had regarding cosmetic procedures.

The information collected was then analyzed by Microsoft Excel, a powerful tool for organizing and analyzing quantitative data. For the analysis of categorical variables, frequencies, and percentages were used, and for continuous variables, the mean and standard deviation were calculated using Excel. This statistical analysis aimed to determine the attitudes and levels of cosmetic surgery awareness among university students and how their perceptions relate to cultural, social, and media inputs.

This particular research work applied measures that would prevent the abuse of the participants' rights and ensure that they were protected throughout the conduct of this study. The pupils needed to give their written consent before the onset of the study, which must be in writing but in electronic form. This process educated them on the objective of the study, the methods of data collection, the rights of the participant, and the steps taken to guarantee the privacy of the subject. Thus, all the information that could be linked to specific individuals was masked and/or deleted to meet ethical requirements. This research had been approved according to the guidelines of the Princess Nourah University Institutional Review Board (PNU IRB) and given exemption as it is considered minimal-risk research.

Results and Discussion

Socio-Demographic data

As seen in **Table 1** of the socio-demographic data, the study sampled 430 university students, with a majority (60.23%) being aged 20 years or older. Females represented a significant majority of the respondents, constituting 83.95%, while males accounted for only 16.05%. Most participants were single (93.95%), with only a small fraction being married (5.58%) or having other marital statuses such as divorced or widowed (each at 0.23%). Interestingly, over half of the participants (54.65%) had family members working in the health sector, which might influence their knowledge and perceptions regarding health-related procedures, including cosmetic interventions. This demographic profile provided a foundation for understanding the attitudes and knowledge levels regarding cosmetic procedures among university students in Riyadh, shedding light on how background factors such as age, gender, and family influence in the health sector might intersect with their perspectives on cosmetic enhancements.

Table 1. Socio-demographic data

Variables	N= 430	%	
Age	≥ 20 years old	259	60.23
	< 20 years old	171	39.77
Gender	Male	69	16.05
	Female	361	83.95
Current Marital status	Single	404	93.95

	Married	24	5.58
	Divorced	1	0.23
	Widowed	1	0.23
Family members in the health sector	Yes	235	54.65
	No	195	45.35

As shown in **Table 2** of the Knowledge and Attitude section, a substantial 86.51% of the participants were aware of the consequences of cosmetic procedures, indicating a high level of awareness among the students. However, only 10.93% believed that cosmetic procedures are standard, with a significant 79.07% disagreeing, suggesting skepticism or caution regarding the normalization of these interventions. The data also revealed that very few students (1.63%) had personally experienced the consequences of cosmetic procedures. According to the results, 67.67% of students (291) found that the cost of cosmetic procedures is important, 13.02% (56) found that it is not important, and 19.30% (83) were not sure. This means that price is a major consideration for many when deciding on cosmetic therapies or procedures to have done. This disparity between awareness of risks and personal experience might reflect an effective dissemination of information about potential risks without widespread negative outcomes among the respondents themselves.

Table 2. Knowledge and Attitude

Variables	Yes	%	No	%	Do not know	%
Knowing that Cosmetic procedures are standard.	47	10.93	340	79.07	43	10.00
Knowing that cosmetic procedures have consequences.	372	86.51	38	8.84	20	4.65
Experienced consequences from cosmetic procedures.	7	1.63	399	92.79	24	5.58
Asked their doctor about cosmetic procedure details.	58	13.49	350	81.40	22	5.12
Knowledge about different strategies or medications to manage or overcome the consequences of cosmetic procedures.	34	7.90	378	87.90	18	4.19
Cosmetic procedure price matters.	291	67.67	56	13.02	83	19.30

As shown in **Figure 1**, the data on the knowledge about the most common non-surgical cosmetic procedures among students reveals a varied understanding. Filler injections are the most recognized procedure, known by 318 students, closely followed by Botox with 289 acknowledgments. Hair removal is also commonly recognized, as noted by 244 students. In contrast, knowledge about non-surgical fat reduction and laser skin regeneration is less common, recognized by only 51 and 100 students, respectively. The 'Others' category, the least familiar, is known by just 25 students, indicating niche awareness within

this subgroup. This distribution suggests a predominant familiarity with procedures frequently highlighted in media and advertising.

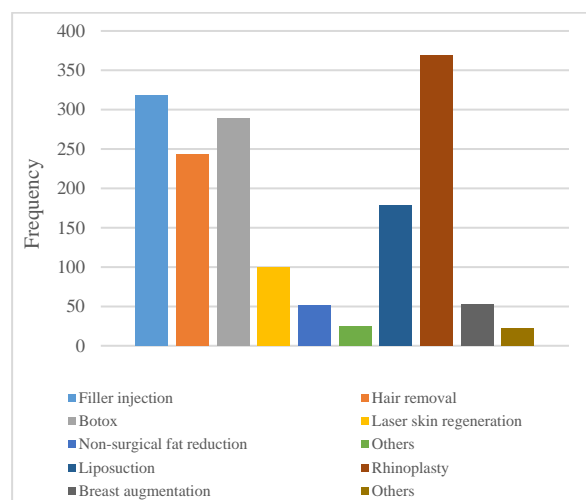


Figure 1. Knowledge about the Most Common Non-Surgical and Surgical Cosmetic Procedures

Figure 1 also illustrates the students' knowledge regarding the most common surgical cosmetic procedures. The data indicates that rhinoplasty is the most recognized surgical cosmetic procedure among the surveyed students, with 369 respondents aware of it. Liposuction also shows considerable recognition, known by 178 students. In contrast, knowledge about breast augmentation is significantly lower, with only 53 students indicating awareness. Other less common surgical procedures are least known, with just 22 students recognizing them. This distribution underscores a higher awareness of facial cosmetic surgery, particularly nose reshaping, which could be attributed to its popularity and frequent depiction in media as compared to other procedures.

Figure 2 depicts the primary motivations for undergoing cosmetic procedures among the surveyed population. The data reveals that the most prevalent reason, by a significant margin, is the influence of social media and fashion, cited by 258 respondents. This suggests that contemporary trends and online cultural phenomena heavily affect decisions regarding cosmetic enhancements. Personal desire or the aspiration to enhance one's appearance is the next significant motivator, identified by 117 participants. The effects of surrounding people, including family and friends, influence 38 respondents, highlighting the role of social environments in such decisions. Medical needs, though less common, still motivate 98 individuals, indicating health-related considerations also play a role in opting for cosmetic procedures. Other less common reasons are noted by a small fraction of the survey participants.

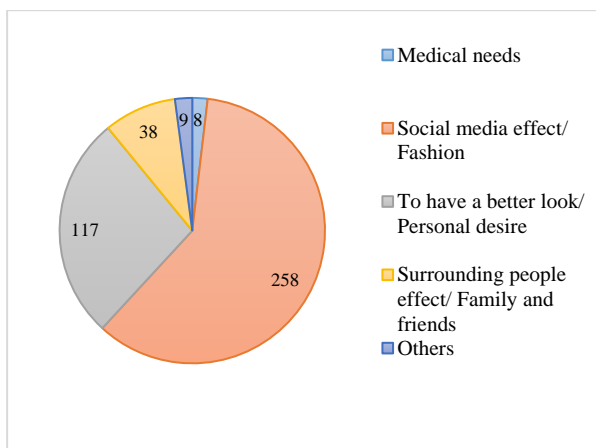


Figure 2. Primary Motivations for Undergoing Cosmetic Procedures

Figure 3 illustrates the sources from which individuals gather information about cosmetic procedures. It reveals that the Internet and social media are the predominant sources used by 200 respondents, underscoring the significant impact of digital platforms in disseminating information about cosmetic enhancements. Physicians are also a major source of information, trusted by 199 respondents, highlighting the reliance on professional medical advice when considering such procedures. Friends contribute to the dissemination of information as well, though to a lesser extent, with 28 respondents relying on them. Other sources are minimal, with only 3 respondents indicating alternative channels for acquiring information on cosmetic procedures. This distribution emphasizes the strong influence of online resources and medical professionals in shaping perceptions and decisions regarding cosmetic interventions.

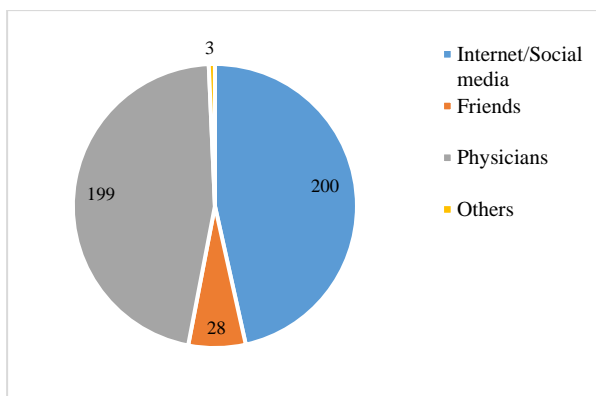


Figure 3. Source of Information for Cosmetic Procedures

Figure 4 displays the consequences experienced by participants following cosmetic procedures. Swelling is the most frequently reported side effect, experienced by 312 individuals, indicating a common immediate reaction to various cosmetic interventions. Bruises, another common physical repercussion, were reported by 221 respondents, reflecting the invasive nature of some cosmetic treatments. Redness and rashes were also noted as common effects, experienced by 181 and 100 respondents, respectively, showcasing typical skin reactions to treatments. Infection, which is a more serious complication, was reported by 120 individuals. Additionally, a notable number of respondents,

55, were unsure or unaware of any consequences they experienced, suggesting a lack of observation or recall regarding the side effects. This data underscores the physical impacts that cosmetic procedures can have and highlights the need for clear communication about potential risks associated with such treatments.

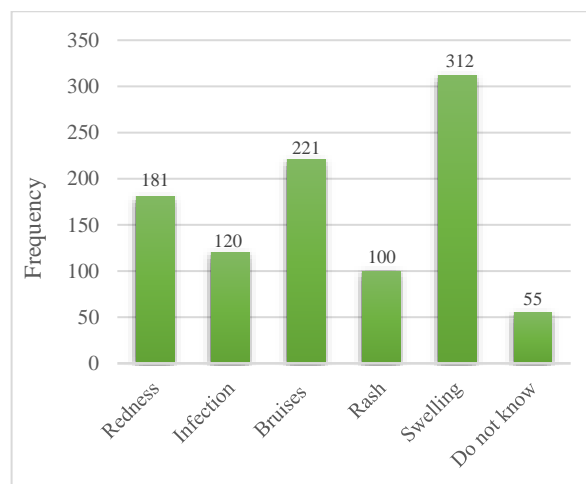


Figure 4. Consequences Experienced by Participants

Figure 5 delineates the strategies and medications utilized by participants to manage or overcome the consequences of cosmetic procedures. Notably, using ice packs emerges as the most prevalent method, adopted by 279 individuals, indicating a common and straightforward approach for alleviating symptoms like swelling and bruising. Analgesics, or painkiller medications, are also frequently used, with 86 respondents relying on them to manage pain associated with procedures. Antibiotics and hydrocortisone are utilized by 115 and 63 participants, respectively, highlighting their use in preventing or treating infections and reducing inflammation. Silicon cream, used by 73 individuals, and other less common strategies mentioned by 47 participants, reflect diverse approaches to post-procedural care. This variety in management strategies underscores the importance of personalized care following cosmetic interventions to minimize discomfort and facilitate recovery.

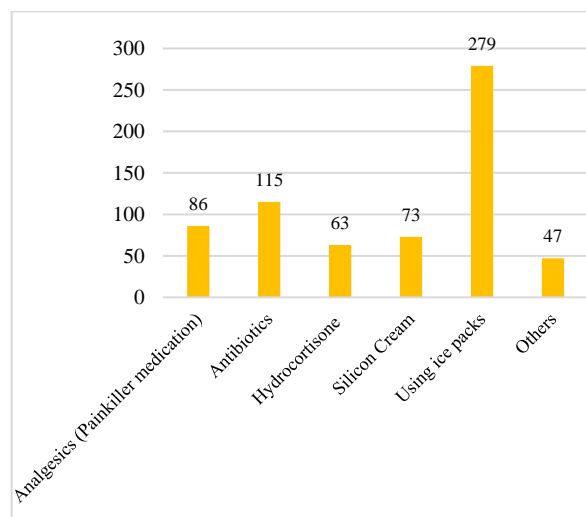


Figure 5. Strategies and Medications Utilized by Participants

The findings of this research provided a significant understanding of the level of awareness and perception of Saudi university students concerning cosmetic surgery, as well as similarities and differences with prior research. The high awareness of cosmetic procedures among the participants of this study is evidenced by the Mayhem Al Hindi *et al.* (2022) study, where they identified a high level of awareness of cosmetic procedures in Majmaah, Saudi Arabia [1]. In the same manner, the acceptance of procedures like botulinum toxin injections and dermal fillers also resonates with global trends that ISAPS (2023) elucidates, revealing that millennials are increasingly opting for minimally invasive treatments.

However, the findings of the present study, where 86.51% of the participants responded affirmatively to the question regarding awareness of the risks of beauty enhancements, are quite different from Shah *et al.* (2021), wherein the authors reported moderate knowledge levels among intermediate female students in Nepal [6]. This might be due to the culture and education system, where information dissemination and perceptions towards cosmetic procedures are different. However, the present study also identified that 1.63% of students had adverse effects from COSM, which is comparatively lower than the study done by Aladwan *et al.* (2023) in Central Jordan [2]. This difference could mean differences in the procedural quality of the procedure or the post-operative care the patients received in the different regions.

As pointed out in this study, the motivation of students towards cosmetic procedures is mainly due to social media and fashion trends. This is in agreement with the literature, for instance, Bondagji *et al.* (2024), who noted that digital media affects the standards of beauty and cosmetic surgery choices [5]. This is because social media has great prominence in the Saudi context, as suggested by Chahine *et al.* (2023), which strengthens the effect of online platforms on the perception and behavior of young adults regarding aesthetics [7]. On the contrary, the low effect of people around and health issues as determinants, which was determined in this study, is by Morait *et al.* (2019), where similar tendencies were noticed in Riyadh, Saudi Arabia [13].

Notably, despite the present study revealing that the participants had good knowledge regarding the outcomes of cosmetic procedures, there are still significant knowledge deficits, including those concerning the extension and complications of services. Of course, this is similar to the observations made by JN *et al.* (2015), who described young people's risk literacy as relatively fragmented [10]. Moreover, the findings of Aladwan *et al.* (2023) revealed the existence of other side effects associated with cosmetic procedures as another important issue that should be studied specifically in Saudi students [2].

This implementation of composite approaches in attending to post-procedural effects, including icing and pain relief, as pointed out in this study, demonstrates an added focus on cosmetic handling. This is similar to what was found in other studies. For example, Hibler *et al.* (2021) found that patients used similar coping mechanisms in the use of minimally invasive cosmetic procedures [9]. However, the heavy use of antibiotics and hydrocortisone also indicates the necessity for more detailed and

temporal patient counseling and education before the procedure; the findings of Al Mashhrawi *et al.* (2023) also supported these approaches, seeking informed patient consent and detailed briefing [11].

Research limitation

In the study, the adopted sampling method is convenience sampling, which is a non-probability sampling method that allows easy and fast data collection from a section of the population that is easily accessible. This method enables great breadth in engaging participants; however, it brings limitations because of possible sampling bias. Specifically, applying the results obtained from this particular sample might not suit every scenario or apply to the public, which is the conclusion that is often drawn from all convenience samples. For instance, the large size of the city and the vulnerable variation of its inhabitants may not be reflected in the sample. Therefore, though the method facilitates two advantages of efficient data gathering involving large geographical areas with little need for elaborate logistical arrangements, it hinders the generalizability of results for all other urban or similar environments.

Conclusion

This research offered a clear understanding of Saudi university students' knowledge and attitudes toward cosmetic procedures. The study thus established social media and fashion trends as the primary causes of such procedures, with many women aware of the outcomes such procedures have. The results also revealed major concerns with minimally invasive procedures, which are global trends in the modern world. Nonetheless, despite the high level of awareness of the procedures, there is little appreciation of some of the potential risks and complications that are likely to arise from beauty procedures in the long run. This further underlines the need to provide and improve educational processes in the sphere that prepare the clients for the procedures, ensuring that the issues are explained as comprehensively as possible. The study also identifies that students are aware of the consequences of procedures, have the intention to prevent them, and always try to use measures for that.

The findings of this research are significant for policymakers and educators to design interventions that will help encourage university students to make proper decisions. Thus, it is possible to contribute to the development of a more reasonable and informed attitude towards cosmetic procedures' demand by filling the knowledge gaps and using social media influence responsibly.

It is recommended to continue the research to explore the further development of the theme and the effects of aesthetic surgery and interventions among young adults to maintain the effectiveness of the educational and policy actions aimed at preventing adverse consequences.

Recommendations

Based on the findings of this study, the following recommendations can be proposed to improve the knowledge and attitudes of Saudi university students towards cosmetic procedures: First, schools and universities should enhance their educational programs to describe all possible threats and advantages, as well as the outcomes of using cosmetic procedures. Such programs should consist of medical conferences and lectures by medical officers on the matter under discussion.

In addition, authorities should look into policies that would make informed consent procedures more comprehensive to make students even more knowledgeable of the consequences that come with cosmetic treatments. It means that the company should also use social media platforms for advertising reasonable beauty standards and sharing information about the given services and their effects.

Finally, there is a need to conduct future research to track the patterns and results of cosmetic procedures within the young adult population to enhance the effectiveness of educational and political measures. This way, it will be easier to raise awareness among students, which will enable them to make better and healthier choices concerning cosmetic improvements.

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Ethics statement: The Institutional Review Board of Princess Nourah bint Abdulrahman University, Riyadh, Saudi Arabia, approved and exempted this study (Ref. No. 24-0618). We obtained informed consent from the university students who agreed to participate in the online survey, as participation was voluntary, and no identifiable information was obtained.

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