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ORIGINAL ARTICLE

Socio-Demographic Characteristics of Individuals Seeking Non-Surgical Aesthetic Procedures: A Cross-Sectional Study

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ABSTRACT

Background: Non-surgical aesthetic procedures are widely used to enhance appearance and psychosocial well-being, with rising demand in Iraq. This study characterized sociodemographic profiles of individuals seeking non-surgical procedures and examined associations with indications, motivations, and outcomes.

Methods: A cross-sectional survey was conducted at Alkindy Teaching Hospital, Dermatology Department (April–September 2023), including Iraqi patients aged ≥16 years presenting for non-surgical aesthetic procedures. A structured questionnaire captured demographics, prior procedures, indications/motivations, information sources, procedure types, satisfaction, and perceived self-concept change.

Results: A total of 137 respondents were enrolled; most were female (67.9%) and lived in urban areas (90.5%). Young adults (18–35 years) predominated (86.86%); 82.48% were single. College education or higher was reported by (73.72%), and students comprised (73.72%). Half had no prior procedures (51.1%). Correction was the leading indication (61.31%), and intrinsic self-desire the chief motivation (79.56%). Fillers were most common (12.41%). Social media was the primary information source (46.72%). Satisfaction was often neutral (52.6%); post-procedure self-concept/body image was confident or neutral in (67.2%).

Conclusion: Non-surgical aesthetic procedures predominated among young, educated, urban Iraqi women, mostly students with moderate incomes. Motivations centered on improving self-image, shaped by social media and medical professionals. Satisfaction was generally neutral, yet confidence often improved.

Key words: Non-surgical aesthetic procedures; Body image; Cosmetic techniques; Social media.

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INTRODUCTION

Elective aesthetic procedures are increasingly prevalent, and it is essential for healthcare practitioners to understand why patients request them [1]. Many individuals pursue cosmetic interventions to enhance social and psychological well-being; however, the durability of these benefits remains uncertain.

Recent statistics indicate a 7.4% rise in procedures from 2018 to 2019; in 2019 the cosmetic procedures industry generated approximately $16.4 billion in the United States. Certain cosmetic procedures have also been linked to effects on U.S. economic dynamics [2, 3].

Cosmetic procedures may be surgical (e.g., rhinoplasty, breast augmentation) or non-surgical (e.g., botulinum toxin, fillers, lasers) [4]. Motivations for seeking aesthetic procedures are varied; the most frequently reported are intrinsic desires to improve appearance, alongside emotional, psychological, and practical considerations [5, 6].

The Tripartite Influence Model posits that peers, parents, and the media shape beauty ideals, and that their effects are mediated by internalization of appearance norms and by appearance comparison [7–9].

In Iraq, aesthetic treatments appear to be increasingly accepted; nonetheless, cultural and religious factors continue to influence uptake [10]. This trend reflects shifting sociodemographic dynamics and evolving perceptions of beauty standards. In urban settings such as Karbala, awareness and perceptions of non-surgical aesthetic procedures are shaped by social media and prevailing beauty ideals [11], suggesting growing interest in appearance enhancement driven by social expectations. The influence of media images varies across demographic groups, and trust in physicians and their credentials remains a key determinant when selecting providers [12].

Studies from Iraq report that individuals seeking aesthetic procedures often have higher educational attainment, with many holding at least a bachelor's degree; education may be associated with greater knowledge of available options and the financial means to pursue them. Younger age is also linked to seeking aesthetic enhancement to align with contemporary beauty standards [12].

Despite rising demand, evidence on non-surgical aesthetic procedures in Iraq and the broader Middle East remains limited. Dermatology and cosmetic surgery services have expanded and attract patients of diverse ages and genders, yet few studies have characterized those seeking aesthetic care in Iraq. Therefore, this study aims to describe the sociodemographic characteristics of individuals seeking non-surgical aesthetic procedures and to examine associations between these characteristics and the procedures undertaken.

MATERIALS AND METHODS

A cross-sectional study was conducted in the Dermatology Department of Alkindy Teaching Hospital, Baghdad Governorate, from 1 April to 30 September 2023. The objective was to analyse sociodemographic characteristics of individuals seeking non-surgical aesthetic procedures and to examine associations between these characteristics and the procedures undertaken. Ethical approval was granted by the Ethics Committee of Alkindy Medical College (No. 203; 29 March 2023), and written informed consent was obtained from all participants.

Eligibility criteria included Iraqi patients aged $\geq$ 16 years attending for non-surgical aesthetic procedures. Individuals presenting for surgical aesthetic procedures or for dermatological diseases were excluded. Systematic random sampling was employed. Clinic records indicated approximately 1,200 eligible visits over the six-month period. Dividing this sampling frame by the minimum required sample size of 109 yielded a sampling interval of 11. After a random start between 1 and 11, every 11th eligible patient was invited beginning 1 April 2023; by 30 September 2023, a total of 137 participants had been enrolled.

Data were collected through face-to-face interviews using a structured questionnaire adapted from previously validated studies. Collected variables included sex, age, residence, marital status, educational level, occupational status, and income, as well as characteristics related to non-surgical aesthetic care: number of presenting complaints; number of previously undertaken non-surgical procedures (coded as 0 when the current visit was the first); types of prior procedures; source of information; primary reason for undergoing the procedure; motivational orientation (intrinsic or extrinsic); self-satisfaction and family/friends' satisfaction with the result on the day of the survey; and self-concept/body image before and after the procedure.

Data entry and analysis were performed using IBM SPSS Statistics, version 26 (Armonk, NY, USA). Descriptive statistics are reported as frequencies and percentages. Associations between categorical variables were assessed using Pearson's chi-square test or the likelihood-ratio chi-square, as appropriate. A two-sided $p < 0.05$ was considered statistically significant, with inferences made at the 95% confidence level.

RESULTS

A total of 137 respondents were included (age range 16–65 years). Females constituted 67.9% (n = 93), and most respondents resided in urban areas (90.5%; n = 124). The largest age group was 18–35 years (86.7%; n = 119), followed by 36–55 years (9.5%; n = 13) and 56–65 years (1.5%; n = 2). Most participants were single (82.5%; n = 113). With respect to education, 73.7% (n = 101) had college-level education or higher. Regarding occupation, 73.7% (n = 101) were students, 19.7% (n = 27) were employed, and 6.6% (n = 9) were housekeepers. Monthly income was ≤ $400 for 54.0% ($n$ = 74) and > $400 for 46.0% ($n$ = 63) **(Table 1)**.

At presentation, 59.1% (n = 81) reported a single complaint, and just over half (51.1%; n = 70) had not undergone any previous procedures. Among those with a prior history, one previous procedure was reported by 22.6% (n = 31), two by 15.3% (n = 21), three by 4.4% (n = 6), and more than three by 6.6% (n = 9). With respect to the type of previously performed procedures, fillers were most common, followed by botulinum toxin, whereas skin rejuvenation was least common.

The predominant stated reason for seeking aesthetic care was correction (61.3%; n = 84), and intrinsic (self-desire) motivation was reported by 79.6% (n = 109). Social media was the most frequent source of information (46.7%; n = 64), followed by healthcare institutions/physicians (32.1%; n = 44) and family/friends (21.2%; n = 29). Self-satisfaction on the survey day was most often neutral (52.6%; n = 72), with 40.9% satisfied (n = 56) and 6.6% unsatisfied (n = 9). Perceived body image showed a favorable shift: the proportion reporting a confident/neutral self-concept increased from 61.3% before to 67.2% after the procedure (+5.9 percentage points), those feeling attractive increased from 16.8% to 28.5% (+11.7 points), and those feeling ugly decreased from 21.9% to 4.4% (−17.5 points) **(Figure 1)**, **(Table 2)**.

Associations between sociodemographic characteristics and the frequency of previously performed non-surgical procedures are summarized in **(Table 3)**. The distribution of procedure frequency differed significantly by place of residence (p = 0.04) and marital status (p = 0.01). In contrast, no statistically significant associations were observed for gender (p = 0.18), educational level (p = 0.50), occupational status (p = 0.25), or income level (p = 0.35).

Cross-tabulations of the number of previously performed procedures with motivational orientation and with pre-procedure self-concept are presented in **(Table 4)**. Although intrinsically motivated individuals accounted for most cases with multiple prior procedures (including all instances of >3 previous procedures), the overall distribution by motivation did not reach statistical significance (p = 0.09). Similarly, the distribution by pre-procedure self-concept/body image was not significant (p = 0.29). Consistent with these findings, no statistically significant difference was observed when comparing body image before versus after the procedure (likelihood ratio p = 0.29).

Table 1. The socio-demographical characteristics of the sample studied (n=137)

Variables	n (%)
Age group	
< 18 years	3 (2.2)
18–35 years	119 (86.7)
36–55 years	13 (9.5)
56–65 years	2 (1.5)
Gender	
Male	44 (32.1)
Female	93 (67.9)
Residence	
Rural	13 (9.5)
Urban	124 (90.5)
Marital status	
Single	113 (82.5)
Married	20 (14.6)
Separated	4 (2.9)
Educational level	
College students, graduates, or more	101 (73.7)
Secondary school	29 (21.5)
Literate	6 (4.4)
Occupational status	
Student currently enrolled	101 (73.7)
Employee	27 (19.7)
Housekeeper	9 (6.6)
Income level	
≤ $400	74 (54.0)
> $400	63 (46.0)

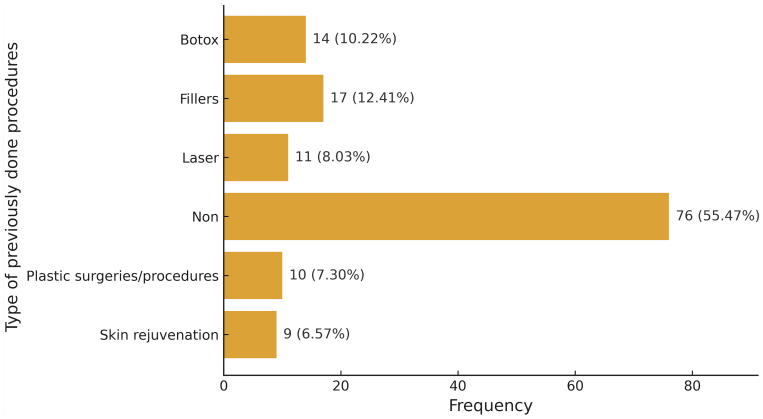

Figure 1. Previously done aesthetic procedures among participants (n=137). Bars are annotated with counts and percentages.

Table 2. Clinical and Motivational Profile of Patients Seeking Aesthetic Procedures

Variables	n (%)
Number of complaints	
One	81 (59.1)
Two	25 (18.3)
Three	17 (12.4)
More than 3	14 (10.2)
Aesthetic procedure history	
Nil	70 (51.1)
One	31 (22.6)
Two	21 (15.3)
Three	6 (4.4)
More than 3	9 (6.6)
Reason for the aesthetic procedure	
Correction	84 (61.3)
Rejuvenation	53 (38.7)
Motivations for aesthetic procedures	
Intrinsic	109 (79.6)
Extrinsic	28 (20.4)
Source of information	
Social media	64 (46.7)
Health institute/doctor	44 (32.1)
Friend, family member	29 (21.2)
Self-satisfaction	
Neutral	72 (52.6)
Satisfied	56 (40.9)
Unsatisfied	9 (6.6)
Self-concept/body image before procedure	
Confident/neutral	84 (61.3)
Felt ugly	30 (21.9)
Felt attractive	23 (16.8)
Self-concept/body image after procedure	
Confident/neutral	92 (67.2)
Felt ugly	6 (4.4)
Felt attractive	39 (28.5)

Table 3. Association between the frequency of aesthetic non-surgical procedures and socio-demographic characteristics

Variables	Frequency of aesthetic non-surgical procedures					*P* value*
	0	1	2	3	>3	
Gender						
Male	29	8	4	1	2	0.18
Female	41	23	17	5	7	
Residence						
Rural	10	0	2	1	0	**0.04**
Urban	60	31	19	5	9	
Marital status						
Single	65	22	13	6	7	
Married	5	7	7	0	1	**0.01**
Separated	0	2	1	0	1	
Educational level						
College graduate or more	54	23	12	4	8	
Secondary school	11	8	7	2	1	0.50
Literate	4	0	2	0	0	
Occupational status						
Student	61	20	10	4	6	
Employee	6	8	9	2	2	0.25
Housekeeper	3	3	2	0	1	
Income level						
≤ $400	43	13	10	4	4	0.35
> $400	27	18	11	2	5	

* Pearson chi-square test.

Table 4. Cross-tabulation of the number of previously done aesthetic procedures by (A) motivation and (B) self-concept/body image before the procedure

(A) Motivation for doing the procedure

	Number of previously done procedures					*p*-value
	0	1	2	3	>3	
Extrinsic (asked by someone else)	19	6	2	1	0	0.09
(%)	67.9%	21.4%	7.1%	3.6%	0.0%	
Intrinsic (self-desire)	51	25	19	5	9	
(%)	46.8%	22.9%	17.4%	4.6%	8.3%	

(B) Self-concept/body image before the procedure

	Number of previously done procedures					*p*-value
	0	1	2	3	>3	
Feeling attractive	13	6	3	1	0	0.29
(%)	56.5%	26.1%	13.0%	4.3%	0.0%	
Feeling confident/normal	45	17	11	5	6	
(%)	53.6%	20.2%	13.1%	6.0%	7.1%	
Feeling ugly	12	8	7	0	3	
(%)	40.0%	26.7%	23.3%	0.0%	10.0%	

Note: Values are counts (N) and row percentages. *p*-values from the likelihood-ratio chi-square test.

DISCUSSION

Dissatisfaction with appearance is common and can affect personal and social functioning, fuelling demand for aesthetic interventions, particularly in contexts where physical appearance is highly valued [13]. In the present study, most individuals seeking non-surgical aesthetic procedures were young adults (under 35 years), which is consistent with findings by Sood et al. [14]. By contrast, Ramirez et al. reported a predominance of clients over 40 years, with women above 40 having 1.4 times higher odds of seeking procedures than younger women [15]. These divergent age profiles likely reflect different motivational drivers: younger adults frequently pursue appearance enhancement influenced by contemporary beauty ideals and social media, whereas older adults often seek interventions to address visible signs of ageing. The interplay of societal pressures, education, and peer dynamics appears to shape interest across age groups.

Female predominance among aesthetic service users remains the rule, while men face distinctive barriers such as stigma, cost concerns, and an industry historically oriented toward female clients [1, 16]. In the current cohort, the most common profile comprised young, single, urban-dwelling women with at least a bachelor's degree, aligning with Al Hindi et al. [17]. Related work by Atari et al. links young women's interest in cosmetic surgery with preferences for partner attributes such as status/resources, attractiveness/sexuality, and education/intelligence, highlighting broader sociocultural influences on aesthetic decision-making [18].

Student status was frequently reported in this sample, differing from findings by Noaman et al., where employed participants predominated [19]. The discrepancy may reflect differing definitions of "student" (e.g., inclusion of postgraduate education) and variation in clinic populations. Both studies, however, converge on urban residence as a correlate of seeking aesthetic procedures, a pattern consistent with international data and with the greater availability, visibility, and social acceptance of such services in urban settings. Understanding student motivations—particularly the roles of social media and peer influence—may aid clinicians and health communicators in tailoring counselling and expectation management for this subgroup.

Income patterns also varied across settings. Compared with Heidarzadeh et al. in Rafsanjan, Iran—where most respondents reported monthly income > $285 [20]—the present cohort predominantly reported income ≤ $400. Financial capacity is an important determinant of treatment uptake, and higher disposable income has been associated with greater use of minimally invasive procedures [21]. Such differences in purchasing power likely contribute to cross-study variation in treatment patterns.

Most participants reported a single presenting concern and no prior non-surgical aesthetic procedures, contrasting with findings from Almasri et al. in Saudi Arabia, where 55.4% had undergone cosmetic procedures [22]. Procedure mix also differed: fillers were most common in the present cohort, whereas laser treatments predominated in Almasri et al. These differences may reflect sample size, service availability, local marketing, cultural perceptions of beauty, and the diffusion of information via social media. Global reports describe a shift toward minimally invasive options, driven by convenience and shorter recovery times [15, 23].

Social media emerged as the principal information source, echoing Alghonaim et al. (68% influence) [24]. Other studies emphasize the additional roles of family and friends in shaping elective health decisions, including aesthetic treatments [25, 26]. Satisfaction in this cohort was generally neutral, differing from a multi-country survey in eight Middle Eastern nations in which attractiveness (56.1%) and self-confidence (51.8%) were prominent drivers of satisfaction [27]. Discrepancies underscore the importance of pre-treatment counselling, realistic expectation setting, and transparent discussion of likely outcomes—without either overpromising benefits or unduly discouraging motivated candidates.

Motivational patterns also varied across contexts. In this sample, "correction" was commonly cited, while many participants reported feeling confident or neutral both before and after the procedure. This contrasts with qualitative findings from Tehran, where motives included feelings of inferiority, loneliness, and fear of the unknown [28]. Such differences likely reflect cultural norms, availability and normalization of procedures, and the degree to which aesthetic enhancement is framed as routine self-care rather than as a response to distress.

Several limitations merit consideration. The sample was drawn from a single dermatology clinic and was relatively small, which may limit generalizability and introduces potential selection bias. The analysis did not stratify outcomes by specific non-surgical procedure types among those treated versus untreated. Satisfaction was assessed on the day of the procedure for many participants, potentially underestimating or misestimating outcomes that evolve over time. Physician recommendations could have influenced choices, raising the possibility of interviewer/observer bias, and self-reported measures are subject to information bias without validated instruments. Multicentre studies with larger samples, longitudinal follow-up, and standardized outcome measures would strengthen the evidence base for non-surgical aesthetic care in this setting.

CONCLUSION

Non-surgical aesthetic procedures were most frequently sought by young, educated, urban Iraqi women, many of

whom were students with moderate incomes. Motivations were predominantly intrinsic, centered on improving self-image, while social media and recommendations from health-care professionals were common external influences. Overall satisfaction was generally neutral to moderate, yet perceived self-confidence improved after treatment. These findings support the development of culturally sensitive awareness initiatives that foster realistic expectations and emphasize safety. Clinical services should adopt validated patient-reported outcome measures, provide structured post-procedure follow-up, and maintain impartial counselling during consultations.

ETHICAL DECLARATIONS

- **Ethics Approval and Consent to Participate**

  The study received ethical approval from Alkindy Medical College, University of Baghdad (Document No. 203, dated March 29, 2023). Written informed consent was obtained from all participants, and confidentiality with secure handling of patient information was maintained throughout all study phases.

- **Consent for Publication**

  Non.

- **Availability of Data and Material**

  The datasets are available from the corresponding author upon reasonable request.

- **Competing Interests**

  The authors declare that there is no conflict of interest.

- **Funding**

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- **Use of Generative Artificial Intelligence**

  The authors declare that no generative AI tools were used in the preparation, writing, or editing of this manuscript.

- **Authors' Contributions**

  All authors contributed to the literature review, study design, data collection, statistical analysis, and manuscript preparation. All authors have read and approved the final version of the manuscript.

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