

Self-reported Patient Motivations for Seeking Cosmetic Procedures

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Supplemental content

IMPORTANCE Despite the growing popularity of cosmetic procedures, the sociocultural and quality-of-life factors that motivate patients to undergo such procedures are not well understood.

OBJECTIVE To estimate the relative importance of factors that motivate patients to seek minimally invasive cosmetic procedures.

DESIGN, SETTING, AND PARTICIPANTS This prospective, multicenter observational study was performed at 2 academic and 11 private dermatology practice sites that represented all US geographic regions. Adult patients presenting for cosmetic consultation or treatment from December 4, 2016, through August 9, 2017, were eligible for participation.

EXPOSURES Participants completed a survey instrument based on a recently developed subjective framework of motivations and a demographic questionnaire.

MAIN OUTCOMES AND MEASURES Primary outcomes were the self-reported most common motivations in each quality-of-life category. Secondary outcomes were other frequently reported motivations and those associated with specific procedures.

RESULTS Of 529 eligible patients, 511 agreed to participate, were enrolled, and completed the survey. Typical respondents were female (440 [86.1%]), 45 years or older (286 [56.0%]), white (386 [75.5%]), and college educated (469 [91.8%]) and had previously received at least 2 cosmetic procedures (270 [52.8%]). Apart from motivations pertaining to aesthetic appearance, including the desire for beautiful skin and a youthful, attractive appearance, motives related to physical health, such as preventing worsening of condition or symptoms (253 of 475 [53.3%]), and psychosocial well-being, such as the desire to feel happier and more confident or improve total quality of life (314 of 467 [67.2%]), treat oneself or celebrate (284 of 463 [61.3%]), and look good professionally (261 of 476 [54.8%]) were commonly reported. Motivations related to cost and convenience were rated as less important (68 of 483 [14.1%]). Most motivations were internally generated, designed to please the patients and not others, with patients making the decision to undergo cosmetic procedures themselves and spouses seldom being influential. Patients younger than 45 years were more likely to undertake procedures to prevent aging (54 of 212 [25.5%] vs 42 of 286 [14.7%] among patients ≥ 45 years; $P < .001$). Patients seeking certain procedures, such as body contouring (19 of 22 [86.4%]), acne scar treatment (36 of 42 [85.7%]), and tattoo removal (8 of 11 [72.7%]), were more likely to report psychological and emotional motivations.

CONCLUSIONS AND RELEVANCE This initial prospective, multicenter study comprehensively assessed why patients seek minimally invasive cosmetic procedures. Common reasons included emotional, psychological, and practical motivations in addition to the desire to enhance physical appearance. Differences relative to patient age and procedures sought may need further exploration.

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Minimally invasive cosmetic procedures have risen in popularity. A 2017 survey by the American Society for Dermatologic Surgery revealed the percentage of consumers considering cosmetic treatment has more than doubled since 2013 (from 30% to 70%).¹ Of the more than 7 million aesthetic procedures performed by dermatologists in 2016, the most common were light and laser therapy, facial rejuvenation injections, chemical peels, and body sculpting.²

Historically, the desire to pursue cosmetic procedures was attributed to vanity or psychopathology.³ More recently, patient motivations have been understood to be more complex. Investigators have suggested that enabling factors may include increased social awareness and acceptance of cosmetic treatments as well as a growing sociocultural emphasis on beauty.^{4,5} However, few studies have empirically assessed the motivations that lead patients to pursue noninvasive and minimally invasive cosmetic dermatologic procedures.^{4,6-9} The studies performed have generally been from a single center, with small sample sizes and focused on a single or a few procedures.

To date, an understanding of the relative importance of the influences that motivate patients to seek cosmetic treatments is lacking. This information may help physicians to identify those who may benefit from specific treatments and better counsel patients regarding expectations.

The purpose of this study was to assess, in a large, diverse, multicenter sample, the characteristics and motivations of patients seeking cosmetic procedures. The study used a patient-centered approach to capture patient motivations with minimal investigator bias. Specifically, the survey instrument was developed using formal qualitative methods that elicited patients' own perceptions of their motivations (A.Waldman, A.M., A.Weil, et al; unpublished data; August 2017).

Methods

We conducted a prospective, multicenter observational study. Adults aged 18 to 85 years presenting for cosmetic consultations or minimally invasive cosmetic procedures were eligible to participate. The study was approved by the institutional review board at Northwestern University and was deemed exempt for all other sites (Harvard/Partners and Western institutional review boards). All patients provided written informed consent.

Patients completed a cosmetic motivations survey (eMethods in the Supplement) developed in collaboration with the Northwestern University Core Outcomes Research and Education Group and based on a previously published subjective framework derived from semistructured interviews. Items assessed motives in 6 quality-of-life domains (cosmetic, emotional, physical, social, school and/or work success, and cost and/or convenience) and other factors pertaining to the decision to pursue treatment and its timing (A.Waldman, A.M., A.Weil, et al; unpublished data; August 2017). Demographic information included sex, race/ethnicity, age, and level of education. No personal identifying information was collected.

Key Points

Question What motivates patients to consider and obtain cosmetic procedures?

Findings This prospective multicenter observational study of 511 patients seeking cosmetic surgical procedures found that, apart from desiring to look better physically, patients want to protect their health (261 [53.0%]), improve their sense of psychological well-being (328 [69.3%]), and increase their comfort and confidence in social situations (269 [56.6%]). In general, patients sought cosmetic procedures to meet their needs, not those of others around them.

Meaning Patients' many motivations for cosmetic procedures include psychological and social goals as well as the desire to appear attractive.

Pearson χ^2 tests were used to compare categorical variables between subgroups. $P < .05$ was considered statistically significant. Statistical analyses were performed using SAS Studio software (version 3.71; SAS Institute, Inc).

Results

Patient Characteristics

Of 529 eligible patients, 511 agreed to participate, were enrolled, and completed the survey from December 4, 2016, through August 9, 2017. Sites included 2 academic and 11 private dermatology practices representing all US geographic regions.¹⁰ Patient characteristics are given in Table 1. Most respondents were female (440 [86.1%]), white (386 [75.5%]), and 45 years or older (286 [56.0%]) and had some college education or higher (469 [91.8%]). Among respondents, 270 (52.8%) had received at least 2 prior cosmetic procedures; 88 (17.2%), 1; and 149 (29.2%), none. Sample sizes varied by question owing to missing responses. In addition, many questions allowed more than 1 answer, resulting in responses in excess of the total number of patients.

Cosmetic Visit Characteristics

Nearly half of respondents were receiving treatment as part of a series (230 of 501 [45.9%]). More than one-quarter had received a single, stand-alone treatment (135 of 501 [26.9%]). The number of procedures ranged from 1 to 8 (mean [SD], 1.45 [1.01]). Interest was greatest for botulinum toxin injections (165 [32.3%]), soft-tissue fillers (94 [18.4%]), and lasers for brown spots and/or melasma (85 [16.6%]). Other common treatments included skin tightening, acne scarring correction, lasers for redness and/or rosacea, cellulite reduction, chemical peel, eyelid surgery, facelift, laser hair removal, lasers for rejuvenation, leg vein treatment, liposuction, microdermabrasion, noninvasive fat reduction, and tattoo removal.

Most patients wanted treatment for an existing condition (ie, treatment for some visible manifestation on the skin that the patient already had but did not want, such as a sign of aging, a scar, or other disfigurement vs preventive treatment for an undesirable skin condition that had not yet manifested but

soon might), with 212 (41.5%) interested in a new treatment and 176 (34.4%) in a repeated treatment. Nearly half wanting a repeated procedure requested toxin injections (83 of 176 [47.2]) and nearly one-quarter requested fillers (43 of 176 [24.4%]). Prevention was considered by 99 patients (19.4%), of whom 47 (47.5%) were interested in toxin injections. Subgroup analysis showed differences across ages, with 54 of 212 younger than 45 years (25.5%) and 42 of 286 older patients (14.7%) seeking preventive treatment ($P = .003$). Twenty-five patients (4.9%) were following up to adjust outcomes from a prior cosmetic procedure.

Motivations Related to Quality of Life

Cosmetic Appearance

Most patients noted looking younger or fresher (391 of 469 [83.4%]) and having clear skin (382 of 469 [81.4%]) as motivations. More patients wanted to look better, prettier, or more attractive for themselves (417 of 471 [88.5%]) rather than for others (289 of 449 [64.4%]) (eTable 1 in the [Supplement](#)). Three hundred eleven of 456 patients (68.2%) said looking better in photographs was a reason, with half calling this a key motive (149 [32.9%]).

Mental and/or Emotional Well-being

The most common motive for cosmetic procedures was increasing self-confidence (328 of 472 [69.5%]). Other common motives were to feel happier or better overall or improve quality of life (314 of 467 [67.2%]) and to treat oneself, feel rewarded, or celebrate (284 of 463 [61.3%]) (eTable 2 in the [Supplement](#)).

Social Well-being

With regard to social well-being, more than half of patients reported wanting to look good when running into people they knew (269 of 475 [56.6%]) and to feel less self-conscious around others (238 of 473 [50.3%]). Also common was the desire to look good for social events (196 of 464 [42.2%]) and to make a better first impression (180 of 469 [38.4%]) (eTable 3 in the [Supplement](#)).

Physical Health

Preventing worsening of their condition/symptoms was the most common motive for pursuing cosmetic interventions related to physical health (253 of 475 [53.3%]). The second most common was the desire to protect their health in the future (180 of 466 [38.6%]) (eTable 4 in the [Supplement](#)).

Success at Work or School

More than half of patients cited looking good professionally (261 of 476 [54.8%]). More than one-quarter wanted to stay competitive in their professional field (125 of 466 [26.8%]) (eTable 5 in the [Supplement](#)).

Cost and Convenience

Convenience was a motivator for some. Key considerations were time spent to disguise the problem (eg, with makeup, hair, or cover-ups) (189 of 483 [39.1%]) and the hassle of having to carry makeup, look for specific clothing, fix hair a certain way, etc (120 of 472 [25.4%]). In general, factors related to cost and convenience were less important motivators, with 68 of 483 (14.1%) finding such factors unimportant (eTable 6 in the [Supplement](#)).

Table 1. Characteristics of Survey Responses

Characteristic	No. (% of Patients (N = 511) ^a
Age, y	
18-24	24 (4.7)
25-34	96 (18.8)
35-44	92 (18.0)
45-54	116 (22.7)
55-64	104 (20.4)
≥65	66 (12.9)
Sex	
Male	57 (11.2)
Female	440 (86.1)
Other	2 (0.4)
Race/ethnicity	
White	386 (75.5)
Black or African American	12 (2.3)
Latino or Hispanic	50 (9.8)
Asian	23 (4.5)
Middle Eastern	4 (0.8)
Multiracial	19 (3.7)
Native American	3 (0.6)
Other (not specified)	1 (0.2)
Level of education	
Less than high school	5 (1.0)
High school diploma or GED	24 (4.7)
Some college or 2-y degree	126 (24.7)
Bachelor's degree	166 (32.5)
Some graduate education	36 (7.0)
Graduate degree	141 (27.6)
Location of practice	
Northeast	148 (29.0)
South	149 (29.2)
Midwest	105 (20.5)
West	109 (21.3)

Abbreviation: GED, General Educational Development.

^a Numbers for each characteristic may not sum to total number owing to missing data.

nience were less important motivators, with 68 of 483 (14.1%) finding such factors unimportant (eTable 6 in the [Supplement](#)).

Other Influential Factors

Source of Original Idea

Common sources of the idea to pursue cosmetic treatment were oneself (225 [44.0%]), the physician (120 [23.5%]), and friends or family approximately one's age (78 [15.3%]). Less common sources included television, online or print advertisements, or other media (49 [9.6%]); friends or family older by at least 10 years (27 [5.3%]); friends or family younger by at least 10 years (14 [2.7%]); and spouse or partner (12 [2.3%]).

Why Now?

The most common reason for the timing of cosmetic treatment was the ability to afford it now (253 of 425 [59.5%]). Other common influences were unhappiness, irritation, or pain reaching a tipping point (215 of 418 [51.4%]); availability of new or

Table 2. Self-reported Reasons for Considering or Having a Cosmetic Procedure Now

Reason (No. of Respondents)	No. (%) of Patients by Response ^a		
	Not a Reason	Minor Reason	Key Reason
Unhappiness/irritation/pain reached a tipping point (n = 418)	203 (48.6)	89 (21.3)	126 (30.1)
Can afford it now (n = 425)	172 (40.5)	146 (34.4)	107 (25.2)
New treatment available or treatment has been improved (n = 423)	239 (56.5)	88 (20.8)	96 (22.7)
Just learned about it being an option (n = 410)	278 (67.8)	61 (14.9)	71 (17.3)
Life change, major life event, or special occasion (n = 411)	281 (68.4)	74 (18.0)	56 (13.6)
Concerns about summer clothing and cover-up (n = 406)	291 (71.7)	62 (15.3)	53 (13.1)
Others convinced you now is the time (n = 410)	312 (76.1)	59 (14.4)	39 (9.5)
Last resort; ran out of other options (n = 404)	318 (78.7)	50 (12.4)	36 (8.9)
Treatment is a gift (n = 397)	329 (82.9)	34 (8.6)	34 (8.6)
Overcame fear of doing it (n = 409)	302 (73.8)	74 (18.1)	33 (8.1)
Overcame embarrassment about doing it (n = 405)	334 (82.5)	43 (10.6)	28 (6.9)
Insurance now covers it or now has insurance for it (n = 395)	360 (91.1)	20 (5.1)	15 (3.8)

^a Percentages are calculated using the number listed for each question item as the denominator owing to missing responses. Percentages have been rounded and may not total 100.

Table 3. Self-reported Degree to Which Reputation and Experience of the Procedure or Physician Influenced the Decision to Undergo a Cosmetic Procedure or Consultation

Reason (No. of Respondents) ^a	No. (%) of Patients by Response ^b			
	Not a Reason	A Little	Somewhat	A Lot
Physician reputation (n = 470)	47 (10.0)	27 (5.7)	80 (17.0)	316 (67.2)
Clinic or hospital reputation (n = 450)	120 (26.7)	26 (5.8)	79 (17.6)	225 (50.0)
Own past experiences with this treatment (n = 451)	196 (43.5)	30 (6.7)	49 (10.9)	176 (39.0)
Experiences of family or friends with this treatment (n = 452)	205 (45.4)	35 (7.7)	66 (14.6)	146 (32.3)
Testimonials of persons in advertisements (n = 452)	246 (54.4)	50 (11.1)	75 (16.6)	81 (17.9)

^a A total of 27 patients described other reasons not tabulated.

^b Percentages are calculated using the number listed for each question item as the denominator owing to missing responses. Percentages have been rounded and may not total 100.

improved treatment (184 of 423 [43.5%]); and recently becoming aware that treatment is an option (132 of 410 [32.2%]) (Table 2).

Reputation and Experience of the Procedure or Physician

Reputation of the dermatologist (396 of 470 [84.3%]), followed by that of the facility (304 of 450 [67.6%]), were the most influential factors in the patients’ decision to come in for treatment or consultation. Testimonials were the least influential in this category, with 246 (54.4%) reporting that testimonials did not at all affect their decision (Table 3). Details regarding patient motivations among those interested in specific treatments are provided in Table 4. Of note, those seeking certain procedures, such as body contouring (19 of 22 [86.4%]), acne scar treatment (36 of 42 [85.7%]), and tattoo removal (8 of 11 [72.7%]), were more likely to report psychological and emotional motivations.

Discussion

This first multicenter prospective observational study of the motivations of patients receiving minimally invasive cosmetic procedures, to our knowledge, confirmed and extended the results of recent single-center studies. Patients seeking cosmetic treatments most commonly cited motivations pertaining to aesthetic appearance, including the desire to attain clear-looking, beautiful skin and a more

youthful, attractive appearance. Motives related to psychosocial well-being, such as the desire to feel happier or better overall, to improve total quality of life, to treat oneself, to feel rewarded, or to celebrate, were also commonly reported. Motivations related to cost and convenience were infrequent.

Procedure-specific differences occurred. Patients interested in skin tightening, treatment of wrinkles and jowls, neurotoxins, and injectables were mostly concerned with cosmetic appearance, including looking younger or “more like myself again” and maintaining their current appearance. Patients requesting laser treatment for pigmentation or erythema were motivated most by cosmetic appearance, including the desire to have clear-looking skin with a more youthful, attractive appearance and to repair damage to their looks. Maintaining the current appearance was relatively more important to those interested in addressing brown spots or melasma, whereas those interested in treating redness, rosacea, and/or red spots were more motivated to look good without wearing makeup. Patients interested in liposuction, non-invasive fat reduction, and cellulite most commonly listed motivations related to cosmetic appearance and emotional well-being. Increasing self-confidence was the top choice for all 3 procedures.

Patients commonly reported thinking of the idea to seek cosmetic treatment themselves, whereas television and other media were among the least commonly cited influences. If patients are being influenced by media, they appear not consciously aware of this or unwilling to admit it. Nearly one-

Table 4. Top 5 Most Common Self-reported Motivations Associated With Specific Cosmetic Dermatologic Procedures

Treatment (No. of Patients Seeking Treatment)	No. (%) of Patients ^a	
	Key Reason	Minor Reason
Acne scarring treatment (n = 42)		
Have clear-looking skin or beautiful skin	35 (83.3)	6 (14.3)
Look better, prettier, or more attractive to oneself	30 (71.4)	6 (14.3)
Repair damage to looks	30 (71.4)	6 (14.3)
Increase self-confidence	21 (50.0)	15 (35.7)
Feel happier or better overall or improve total quality of life	21 (50.0)	13 (31.0)
Botulinum toxin (n = 165)		
Look younger or fresher	126 (76.4)	21 (12.7)
Look better, prettier, or more attractive to oneself	109 (66.1)	32 (19.4)
Maintain current appearance longer	99 (60.0)	34 (20.6)
Have clear-looking or beautiful skin	81 (49.1)	36 (21.8)
Look better in photographs	51 (30.9)	65 (39.4)
Cellulite treatment (n = 14)		
Look younger or fresher	8 (57.1)	3 (21.4)
Have clear-looking or beautiful skin	9 (64.3)	2 (14.3)
Look better, prettier, or more attractive to oneself	10 (71.4)	1 (7.1)
Increase self-confidence	4 (28.6)	7 (50.0)
Have a greater sense of freedom to do things, wear things, or go places that you want	3 (21.4)	4 (28.6)
Chemical peel (n = 15)		
Look younger or fresher	11 (73.3)	2 (13.3)
Have clear-looking or beautiful skin	13 (86.7)	0
Look better or prettier or more attractive to oneself	9 (60.0)	2 (13.3)
Repair damage to looks	6 (40.0)	5 (33.3)
Maintain current appearance longer	9 (60.0)	2 (13.3)
Facial contouring surgery (n = 8)^b		
Look younger or fresher	8 (100)	0
Look better or prettier or more attractive to oneself	7 (87.5)	1 (12.5)
Have clear-looking or beautiful skin	5 (62.5)	2 (25.0)
Get rid of or reduce a feature always disliked	6 (75.0)	1 (12.5)
Feel happier or better overall or improve total quality of life	5 (62.5)	2 (25.0)
Prevent condition or symptoms from getting worse	5 (62.5)	2 (25.0)
Laser hair removal (n = 32)		
Have clear-looking or beautiful skin	21 (65.6)	5 (15.6)
Look better or prettier or more attractive to oneself	21 (65.6)	4 (12.5)
Increase self-confidence	15 (46.9)	8 (25.0)
Get rid of or reduce a feature always disliked	18 (56.3)	2 (6.3)
Feel happier or better overall or improve total quality of life	14 (43.8)	6 (18.8)
Lasers for brown spots or melasma (n = 85)		
Have clear-looking or beautiful skin	69 (81.2)	9 (10.6)
Look younger or fresher	53 (62.4)	18 (21.2)
Look better, prettier, or more attractive to oneself	52 (61.2)	18 (21.2)
Repair damage to looks	49 (58.0)	18 (21.2)
Maintain current appearance longer	40 (47.1)	17 (20.0)

(continued)

Table 4. Top 5 Most Common Self-reported Motivations Associated With Specific Cosmetic Dermatologic Procedures (continued)

Treatment (No. of Patients Seeking Treatment)	No. (%) of Patients ^a	
	Key Reason	Minor Reason
Lasers for redness, rosacea, or red spots (n = 40)		
Have clear-looking or beautiful skin	34 (85.0)	1 (2.5)
Look better, prettier, or more attractive to oneself	25 (62.5)	7 (17.5)
Repair damage to looks	24 (60.0)	8 (20.0)
Be able to look good without make up	20 (50.0)	9 (22.5)
Look younger or fresher	21 (52.5)	6 (15.0)
Lasers for rejuvenation (n = 39)		
Have clear-looking or beautiful skin	30 (76.9)	2 (5.1)
Look younger or fresher	30 (76.9)	1 (2.6)
Look better, prettier, or more attractive to oneself	23 (59.0)	8 (20.5)
Repair damage to looks	20 (51.3)	9 (23.1)
Maintain current appearance longer	23 (59.0)	4 (10.3)
Leg vein treatment (n = 17)		
Look more like oneself again	11 (64.7)	2 (11.8)
Look younger or fresher	10 (58.8)	2 (11.8)
Have clear-looking or beautiful skin	10 (58.8)	2 (11.8)
Look better, prettier, or more attractive to oneself	12 (70.6)	0
Prevent condition or symptoms from getting worse	9 (52.9)	3 (17.6)
Feel more comfortable or less self-conscious around others	7 (41.2)	5 (29.4)
Liposuction (n = 12)		
Look better in photographs	3 (25.0)	8 (66.7)
Treat oneself, feel rewarded, or celebrate	5 (41.7)	6 (50.0)
Be able to wear anything or look good in clothes you like	7 (58.3)	3 (25.0)
Increase self-confidence	6 (50.0)	4 (33.3)
Feel happier or better overall or improve total quality of life	6 (50.0)	4 (33.3)
Look good when run into acquaintances	3 (25.0)	7 (58.3)
Microdermabrasion (n = 8)		
Have clear-looking or beautiful skin	3 (37.5)	4 (50.0)
Look more like oneself again	2 (25.0)	5 (62.5)
Keep up or fit in with the looks of those around	3 (37.5)	4 (50.0)
Look better, prettier, or more attractive to others	3 (37.5)	4 (50.0)
Look younger or fresher	4 (50.0)	2 (25.0)
Match external self to who you feel like inside	2 (25.0)	4 (50.0)
Look better in photographs	2 (25.0)	4 (50.0)
Maintain current appearance longer	4 (50.0)	2 (25.0)
Feel happier or better overall, or improve total quality of life	2 (25.0)	4 (50.0)
Feel younger, more vitality and energy, or rejuvenated	3 (37.5)	3 (37.5)
Noninvasive fat reduction (n = 22)		
Look better, prettier, or more attractive to oneself	17 (77.3)	4 (18.2)
Increase self-confidence	8 (36.4)	11 (50.0)
Feel happier or better overall or improve total quality of life	9 (40.9)	7 (31.8)
Look younger or fresher	11 (50.0)	4 (18.2)

(continued)

Table 4. Top 5 Most Common Self-reported Motivations Associated With Specific Cosmetic Dermatologic Procedures (continued)

Treatment (No. of Patients Seeking Treatment)	No. (%) of Patients ^a	
	Key Reason	Minor Reason
Look more like oneself again	9 (40.9)	6 (27.3)
Treat oneself, feel rewarded, or celebrate	11 (50.0)	4 (18.2)
Look good when run into acquaintances	7 (31.8)	8 (36.4)
Soft-tissue fillers (n = 94)		
Look better, prettier, or more attractive to oneself	60 (63.8)	23 (24.5)
Look younger or fresher	71 (75.5)	11 (11.7)
Maintain current appearance longer	52 (55.3)	25 (26.6)
Look more like oneself again	53 (56.4)	20 (21.3)
Have clear-looking or beautiful skin	45 (47.9)	21 (22.3)
Tattoo removal (n = 11)		
Feel happier or better overall or improve total quality of life	4 (36.4)	4 (36.4)
Look more like oneself again	3 (27.3)	4 (36.4)
Increase self-confidence	3 (27.3)	4 (36.4)
Feel more relaxed, less anxious, less obsessed with worry	2 (18.2)	5 (45.5)
Restrictions related to having to wear only certain clothing, wearing hair only one way, etc	1 (9.1)	6 (54.5)
Wrinkles and jowls or skin-tightening treatment (n = 55)		
Look younger, fresher	47 (85.5)	2 (3.6)
Look better, prettier, or more attractive to oneself	40 (72.7)	8 (14.5)
Have clear-looking or beautiful skin	33 (60.0)	12 (21.8)
Maintain current appearance longer	35 (63.6)	8 (14.5)
Look more like oneself again	32 (58.2)	10 (18.2)

^a Percentages are calculated using the number listed for each question item as the denominator owing to missing responses.

^b Includes facelift (ie, rhytidectomy) and eyelid surgery (ie, blepharoplasty).

quarter reported a physician's recommendation as the motivation for initial presentation, and another quarter pointed to friends and family, but only 2.3% mentioned their spouse or partner. This finding highlights the importance of social norms and is in agreement with prior data from Sobanko et al¹¹ and von Soest et al,⁵ who indicate that knowing someone who has undergone cosmetic treatment is suggestive of patients' interest.

Ability to afford treatment commonly influenced timing of treatment. This finding is consistent with that of Sobanko et al¹¹ that financial limitations were the greatest hindrance to pursuing treatment. Payment plans, package discounts for multiple treatments, or more widely spaced intervals between sessions may improve access to treatments.

Of the 1 in 5 patients seeking preventive treatment, most were younger than 45. Nearly half of those interested in prevention wanted neuromodulator injections, which were also the most common procedures among patients coming to repeat a treatment. This finding suggests high prevalence of the belief that neuromodulator injections are an effective means for delaying aging. This belief, in turn, may be founded on the patient expectation that some procedures protect patient health

or prevent worsening of symptoms. Such a motivation for treatment also emerged in the qualitative study (A.Waldman, A.M., A.Weil, et al; unpublished data; August 2017) that led to the framework that underpinned the present study. Although we did not interview patients in detail regarding their beliefs about physical health, we may speculate that patients consider overall health to be a holistic construct, with skin aging and disfigurement being manifestations of declining health.

In our study, most patients reported internal sources of motivation, which are associated with a greater likelihood of satisfaction with treatment outcomes,¹¹ rather than external sources (eg, pressure from spouse or partner, desire to attract a mate, or desire to be competitive with colleagues). Moreover, several subgroups reported motivations that were predominantly psychological and emotional, rather than physical. Although we are not aware of direct evidence showing that cosmetic treatments help patients psychologically, increasing self-confidence was a common motive for patients requesting acne scar treatment and microdermabrasion, body contouring treatment, and laser hair removal. Those interested in body or facial contouring procedures, acne scar treatment, tattoo removal, and microdermabrasion frequently noted the desire to feel happier overall or improve total quality of life. Patients desiring body contouring procedures also wanted to treat themselves or to feel celebrated.

For a significant 122 of 449 participants (27.1%), the primary motivation was to look better for others (eTable 1 in the Supplement). This motivation may negatively correlate with final patient-reported outcomes. Identifying patients before treatment who are thus externally motivated may enable clinicians to defer treatment or to better counsel patients regarding likely procedure benefits.

Patients seeking microdermabrasion were unusual in having many motivations, including external ones, such as the desire to keep up, to fit in with the looks of those around them, and to look more attractive to others. Given the modest aesthetic benefits of microdermabrasion, patients selectively requesting such treatments may have been unsophisticated novices ambivalent about cosmetic procedures and unsure of the likely outcomes. Such patients may benefit from further education.

A preliminary finding based on a small sample of such patients was that those seeking tattoo removal were mostly motivated to improve mental or emotional health. Most reported the desire to feel happier and less anxious or less obsessed with worry. To our knowledge, this study is the first to indicate that patients seeking tattoo removal may be more likely to have mental health issues (especially anxiety) than patients seeking other cosmetic procedures. Additional studies on larger samples are needed to evaluate the effectiveness of tattoo removal in improving psychological symptoms.

Overall, this study shows that patients seek aesthetic or cosmetic procedures for various reasons. Often, the motivation is not simply to look attractive, but to address serious psychological and emotional issues. Emotional considerations can be severe or milder, such as insufficient social confidence. The need to bolster confidence, the complete absence of which can be crippling, was noted by 69.5% of respondents. Cosmetic procedures

may also be necessary to correct significant physical disfigurement interfering with work or daily living. Most patients were concerned with how they looked at work and in protecting their physical health, and for some, this motive was the most important. Together, these data add to the growing body of evidence that treatments aimed at improving physical appearance can treat significant physical and psychological illness.

At present, it is exceedingly difficult to obtain access to treatments deemed by payers to be elective and cosmetic, and advocacy is needed to ensure that patients get such procedures that are medically necessary. Among the conditions requiring treatment are disfiguring or functionally restricting scars of the face or the hands. Scars can be painful, socially embarrassing, or prejudicial to obtaining or keeping a job and may limit activities of daily living (eg, perioral scars impeding eating and talking, or hand scars preventing holding a fork). Extensive acquired pigmentary and vascular lesions of the head and neck, such as melasma, postinflammatory hyperpigmentation, and various erythematous and telangiectatic conditions, can similarly interfere with work and social activities. At present, the only covered conditions in this category are congenital vascular anomalies. Facial hirsutism due to hormonal imbalance or polycystic ovarian disease is troubling for patients and affects social and work interactions. Providing a full list of conditions and procedures that should be covered, and how, is beyond the scope of this investigation. One method of moving toward this goal would be the introduction of a series of new experimental category III *Current Procedural Terminology* codes to address specific conditions, followed by clinical trials to show treatment-associated benefit. Guidelines could be developed to clarify technique and indications. Subsequent elevation of the *Current Procedural Terminology* codes to category I may then be followed by Medicare valuation and ultimate acceptance by commercial carriers. Indeed, category III codes for fractional ablative laser for functional improvement of traumatic and burn scars were recently introduced and are effective as of January 2018.

The present study differs from earlier surveys not just in size and scope, but also in the methods used to develop the survey. Rather than relying exclusively on prior literature and physician input to produce a list of potential patient motivations, we based our questionnaire on a recent subjective framework created to represent patients' cosmetic motivations (A.Waldman, A.M., A.Weil, et al; unpublished data; August 2017). This framework was empirical, built on data obtained from semistructured patient interviews and sifted through iterative rounds of formal qualitative analysis to yield recurrent themes and subthemes. As a consequence of our technique, we believe the measure in this study closely reflected the views of patients seeking cosmetic procedures and was comprehensive in including common and uncommon motivations for cosmetic procedures. Having a more complete and accurate list of potential motivations, in turn, in-

creased the likelihood that data elicitation from surveyed patients was similarly comprehensive. Measures developed without patient input cannot be expected to assess all factors that patients find relevant.

Strengths and Limitations

This overall sample was much larger and more diverse than in any previous study that we are aware of. It included patients from multiple sites, all geographic regions, academic and private practices, and patients currently receiving treatments as well as those seeking consultation. Although the cosmetic procedures considered were numerous, diverse, and even heterogenous, they were unified by similarity of intent, which was to modify visible cutaneous manifestations of skin aging, particularly color and texture abnormalities, with minimally invasive procedures. This study provides new and important insights into the motivations of patients presenting to cosmetic dermatology clinics but also has limitations. Most respondents were female, as in the patient population seeking cosmetic procedures.¹² In addition, several subgroups had relatively small sample sizes. Further research regarding rhytidectomy and blepharoplasty, for instance, should include more cases, possibly by including different sites or clinicians in other specialties. A future study may seek to compare the procedures that patients initially described wanting with those that they subsequently chose to receive. In addition, work needs to be performed to better understand the extent to which patients' psychosocial motivations for treatment are correlated with associated posttreatment psychological benefits or the lack thereof. One final limitation was that the questionnaire instrument used allowed patients to rank more than 1 major reason per domain.

Conclusions

This study was the first prospective, national, multicenter study, to our knowledge, to assess the motivations of patients undergoing cosmetic dermatology and surgery. In addition, this study was the first, to our knowledge, to investigate cosmetic motivations with a survey instrument systematically developed using patient input. Patients seeking cosmetic procedures were found to be motivated by factors much more complicated than vanity, including impairments in emotional, physical, social, and professional quality of life. Responses indicated that most had internal sources of motivation. By helping clinicians to better understand why patients pursue particular cosmetic interventions, this study may help clinicians to better counsel patients and manage expectations. Future research may focus on motivations in relevant subgroups, such as men, or patients with unwanted tattoos.

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