

Multidimensional Indicators as Enablers on Perception of Facial Beauty and Appearance among Indian Population: A Descriptive Cross-Sectional Study

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Abstract

Background: Facial appearance has been a flagbearer of “beauty” since time immemorial. Perception of beauty is highly influenced by cultural, interpersonal, and intra-personal variations. **Objectives:** This study aimed to assess the perception of facial beauty and appearance through multidimensional influencing indicators among the Indian population, and to determine whether the physically attractive person possesses more personal and socially desirable traits than the comparatively less attractive individual. **Materials and Methods:** A study population of 474 with equal male and female population of Indian origin was selected. Their perception was assessed based on the prevalidated, self-administered questionnaire using a tool with five major multidimensional indicators. Six images were selected, three each of male and female subjects, and labeled as A, B, and C, in descending order of attractiveness. The multidimensional influencing indicator tool was self-administered to the participants and the responses were recorded individually. **Results:** Photograph A scored the highest out of the three grading scales in both males and females. **Conclusion:** The most attractive photograph, in both males and females, was deemed to be associated with higher scores of attractiveness and success.

Keywords: Aesthetics, cosmetic, facial image, interpersonal relationships, psychological impact, race

INTRODUCTION

Despite the old adage not to “judge a book by its cover,” facial cues often guide first impressions, and these first impressions guide our decisions.^[1] Many works have been devoted to assessing the validity of the natural selection hypothesis or beauty as a “certificate” of good phenotypic condition. Indeed, it has been documented that cultural, between-person, and intraperson differences influence attractiveness perception in various ways.^[2] The phrase—“First impression is the last impression” implies to the general attractiveness of an individual and how it is perceived by the mass.

It is well established that humans have always preferred beauty over brains, and standards of beauty set by society can impact an individual’s overall personality to an extent that is indescribable. The face is the part of the human

body from which we infer the most information about others, such as gender, identity, intentions, emotions, attractiveness, age, or ethnicity. In particular, by looking at a face, we are able to immediately acquire a consistent impression of its attractiveness.^[3-5] Still, we could have a hard time explaining what makes a face attractive to us. As a matter of fact, which variables determine attractiveness and their interactions are still poorly understood issues.

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The effect of a “beautiful face” can be observed in every aspect of life. In some cases, it has been observed that people with a beautiful face find it easy to get a job or a promotion than someone of the same caliber but less attractive. Beauty has always been associated with positive traits, which largely affects an individual’s personal relationships and sexual life.^[6]

Physical attractiveness has important social consequences. For example, beauty is associated with upward economic mobility, especially for women; attractive individuals are perceived to possess a variety of positive personality attributions.^[7,8] In mock interviews, attractive people are more likely to be hired than less attractive individuals. This can be well understood from advertisements that promote “fairness,” indicating that facial beauty can make life better.

The human face has been a source of great interest to psychologists and other scientists in recent years because of the extraordinarily well-developed ability of humans to process, recognize and extract information from other’s faces.^[9]

If attractiveness is a diffuse characteristic, it must possess at least two states, which are evaluated differentially. All research shows that this criterion is fulfilled: there are both attractive and unattractive people, and it is preferable, better advantageous, and more desirable to be pretty than to be ugly.^[10]

The physical form of an individual’s features majorly plays two roles, i.e., in functionality and in appearance. Therefore, the functional aspect of beauty majorly influences the appearance of an individual and exhibits a direct correlation.^[9]

The quest for beauty has deep psychological roots in human beings and is as indispensable to them as any other quest. It has endowed our lives with an enjoyable depth of being without which it would be dull and drab. Our quest for beauty is as old as human civilization, and there was never a time when humans have been without it.^[11]

On through literature review, few articles were found that delve into this topic, and there was an imminent scarcity of such studies performed on the Indian population. Hence the present study envisaged to assess the perception of facial beauty and appearance through multidimensional influencing indicators among the Indian population. It is aimed at determining whether the physically attractive person possesses more personal and socially desirable traits than the comparatively less attractive individual. It further intended to discern if the physically attractive individuals have better personal and professional life experiences and lead better life than the less attractive individual.

MATERIALS AND METHODS

The current study was a descriptive cross-sectional study aiming to delve into the perception of facial beauty and appearance through multidimensional influencing indicators among the Indian population. It has been

detailed in accordance with the STROBE guidelines, as prescribed by the EQUATOR Network. Ethical approval was obtained from the Institutional Ethics Committee of the Esthetic Clinics. Indian nationals aged 18 years and above, those willing to provide written informed consent, were included in the study. An equal number of participants were selected from four different cities in India (Mumbai, Delhi, Kolkata, and Hyderabad). A pilot study was conducted among 50 participants to sieve through the flaws and feasibility of the study. These were not recruited while constituting the final sample size. Based on the pilot study, the sample size was estimated to be 474, which was rounded off to 480 as the final sample (calculated through G* Power Software, maximum admissible error (d)—4.5%, power of study—80%, level of significance—5%). Individuals with intellectual incompetence or who were diagnosed as mentally challenged were excluded from the study. Stratified random sampling method was deployed to recruit the participants from each city.

The perception was assessed based on the prevalidated, self-administered questionnaire using a tool with five major multidimensional indicators viz: personal traits, professional traits, interpersonal interactions and experiences, occupational index, and professional hierarchy. The psychometric properties of the assessment tool were checked for reliability, which was measured using Cronbach’s alpha and validity, including face validity and content validity ratio.

Twenty standardized digital photographs of college students (10 male and 10 female) were shortlisted based on the following criteria: (facial frontal view, nonchalant look, no make-up on lips, face and eyes, and no accessories). These photographs were assessed by two subject experts (facial plastic surgeon and cosmetic dermatologist) based on a facial attractiveness Likert-rating 1–6 (1 being least attractive and 6 being most attractive). Higher interrater agreement (Kappa statistic = 0.92) led to the final selection of six images (three male and three female) which were categorized and sorted into descending levels of attractiveness and were labeled as A, B, and C (i.e., A being most attractive and C being least attractive). These images were printed on life-size-like placards and were used for the study to generate responses. The multidimensional influencing indicator tool was self-administered to the participants. The responses were recorded individually.

The normality of the data was discerned by Shapiro–Wilk’s test and Kolmogorov–Smirnov’s test. Descriptive statistics and two-way analysis of variance (ANOVA) were applied through SPSS Software (Version 18.0, IBM, Chicago, Illinois, USA). The level of significance was set at $P < 0.05$. Figure 1 depicts the facial appearance of the females selected in the study and labelled A, B and C. Figure 2 depicts the facial appearance of the males selected in the study and labelled A, B and C

Table 1: Descriptive statistics showing the percentage distribution among male personality traits

Trait	Photograph A		Photograph B		Photograph C	
	Grading scale	N%	Grading scale	N%	Grading scale	N%
Selfish	1	30.6666667	3	37.33333	1	32
Creative	1	40	4	29.33333	2	30.6666667
Self-assertive	1	33.3333333	2	30.66667	1	36
Stable	1	37.3333333	3	29.33333	1	33.3333333
Emotional	2	34.6666667	2	26.66667	1	38.6666667
Dependent	1	34.6666667	2	26.66667	1	38.6666667
Safe	2	28	2	34.66667	2	37.3333333
Interesting	1	29.3333333	3	33.33333	5	37.3333333
Genuine	2	30.6666667	2	34.66667	4	34.6666667
Sensitive	1	36	3	33.33333	3	30.6666667
Outgoing	1	34.6666667	1	26.66667	2	38.6666667
Sexual	1	32	2	40	1	28
Permissive	1	33.3333333	3	32	3	34.6666667
Sincere	2	37.3333333	2	28	4	34.6666667
Warm	1	37.3333333	4	36	1	26.6666667
Sociable	2	32	1	40	3	28
Competitive	1	33.3333333	2	30.66667	1	36
Kind	2	38.6666667	2	36	2	25.3333333
Empathic	1	32	1	33.33333	1	34.6666667
Modest	2	33.3333333	5	30.66667	2	33.3333333
Strong	1	32	2	33.33333	1	34.6666667
Serious	1	30.6666667	1	40	2	29.3333333
Humorous	1	26.6666667	2	38.66667	5	34.6666667
Simple	1	37.3333333	27	33.33333	5	29.3333333
Poised	1	33.3333333	1	36	5	30.6666667
Bold	2	37.3333333	2	32	4	30.6666667
Sophisticated	2	34.6666667	1	34.66667	4	30.6666667
Capable	1	37.3333333	2	30.66667	3	32
Trustworthy	1	38.6666667	1	34.66667	4	26.6666667
Enthusiastic	1	37.3333333	2	28	5	34.6666667

Grading scale: 1 = Strong agreement, 2 = Agreement, 3 = Neutral, 4 = Disagreement, 5 = Strong disagreement

RESULTS

The sample comprised of 480 participants, both male and female, of ages ranging between 20 to 35 years, with a mean age of 24.36 ± 2.25 for males and 26.14 ± 3.25 for females. Tables 1 and 2 depict the distribution of male and female personality traits for each photograph, respectively. The table shows that the most attractive male photograph A scored the highest out of the three on the grading scale. Photograph A scored the highest scores out of the three, followed by photographs B and C. Similar results were seen in the female photographs, as the most attractive photograph was deemed to be associated with higher scores of attractiveness and success.

Tables 3 and 4 represent the percentage distribution of socially desirable traits among males and females, respectively. Photograph A scored the highest scores in males, followed by comparable scores in photographs B and C. In females, photograph A scored highest, followed by photograph C and least score for photograph B.

Tables 5 and 6 represent the distribution of interpersonal relationships among male participants and the level of significance among both groups. All the traits were seen to be statistically significant, with photograph A scoring highly among both genders.

Tables 7 and 8 showcase the results of a two-way ANOVA analysis of the distribution of interpersonal relationships and distribution of occupational index, respectively, among the male and female photographs.

DISCUSSION

Attraction and interpersonal interaction have been finely related to each other. An attractive demeanor results in more successful milestones being achieved.^[12,13] Beauty and its various repercussions have been termed as a “status.”^[14] To further investigate this cult, the current study envisaged to comprehensively discern viewpoints, here clustered as “Multidimensional Influencing Indicators,” comprising

Table 2: Distribution of personality traits in female participants

Trait	Photograph A		Photograph B		Photograph C	
	Grading scale	N%	Grading scale	N%	Grading scale	N%
Selfish	1	32	2	32	3	36
Creative	1	32	4	29.333333	2	38.666667
Self-assertive	1	30.666667	2	33.333333	1	36
Stable	1	34.666667	3	33.333333	1	32
Emotional	1	33.333333	2	29.333333	2	37.333333
Dependent	1	38.666667	2	26.66667	1	34.666667
Safe	2	33.333333	2	34.66667	2	32
Interesting	1	34.666667	3	33.333333	5	32
Genuine	2	37.333333	2	30.66667	4	32
Sensitive	1	34.666667	3	33.333333	3	32
Outgoing	1	30.666667	1	30.66667	2	38.666667
Sexual	1	33.333333	2	36	1	30.666667
Permissive	1	33.333333	3	32	3	34.666667
Sincere	2	37.333333	2	28	4	34.666667
Warm	1	34.666667	4	34.66667	1	30.666667
Sociable	2	29.333333	1	36	3	34.666667
Competitive	1	33.333333	2	30.66667	1	36
Kind		34.666667	2		2	32
Empathic	1	33.333333	1	36	1	30.666667
Modest	2	33.333333	5	32	2	34.666667
Strong	1	30.666667	2	33.333333	1	36
Serious	1	30.666667	1	40	2	29.333333
Humorous	1	32	2	38.66667	5	29.333333
Simple	1	34.666667	2	33.333333	5	32
Poised	1	36	1	30.66667	5	33.333333
Bold	1	33.333333	2	36	1	30.666667
Sphisticated	1	33.333333	3	32	3	34.666667
Capable	2	37.333333	2	28	4	34.666667
Trustworthy	1	34.666667	4	34.66667	1	30.666667
Enthusiastic	2	29.333333	1	36	3	34.666667

Grading scale: 1 = Strong agreement, 2 = Agreement, 3 = Neutral, 4 = Disagreement, 5 = Strong disagreement

Table 3: Descriptive statistics showing the percentage distribution among male socially desirable traits

Trait	Photograph A		Photograph B		Photograph C	
	Grading scale	N%	Grading scale	N%	Grading scale	N%
Friendliness	1	36	2	30.66667	4	34.666667
Self-happiness	1	34.666667	3	32	4	33.333333
Physical attractiveness	1	36	2	32	4	30.666667
Passionate	1	36	3	33.333333	2	30.666667
Good-listener	2	32	3	36	3	32
Leadership	2	34.666667	2	32	5	33.333333
Honesty	1	40	2	42.66667	2	44
Responsible	1	33.333333	5	30.66667	2	36
Courageous	1	37.333333	2	34.66667	2	28

Grading scale: 1 = Strong agreement, 2 = Agreement, 3 = Neutral, 4 = Disagreement, 5 = Strong disagreement

of personality and socially desirable traits, interpersonal interaction, occupational status, and professional hierarchical positions.

The viewpoints of males and females, though minorly disproportionate, are majorly targeted and streamlined into the subtle difference in interpretation of the word “beautiful” and “handsome.” Though mutually exclusive

terms, stereotypes point out a woman being adjudged as “beautiful” as opposed to “handsome” for a man. The results of this study were in tandem with Kumar^[11], which showed no significant differences in the responses of either of the genders to the various stems.

An interesting phenomenon discussed in abundance by Dipboye *et al.*, popularly termed the “attractiveness

Table 4: Distribution of socially desirable traits in female participants

Trait	Photograph A		Photograph B		Photograph C	
	Grading scale	N%	Grading scale	N%	Grading scale	N%
Friendliness	1	36	2	28	4	36
Self-happiness	1	37.3333333	3	32	4	30.6666667
Physical attractiveness	1	34.6666667	2	36	4	29.3333333
Passionate	1	30.6666667	3	32	2	37.3333333
Good-listener	1	30.6666667	3	36	3	33.3333333
Leadership	1	30.6666667	2	33.33333	5	36
Honesty	1	36	2	30.66667	2	33.3333333
Responsible	2	37.3333333	5	30.66667	2	32
Courageous	1	37.3333333	2	34.66667	2	28

Grading scale: 1 = Strong agreement, 2 = Agreement, 3 = Neutral, 4 = Disagreement, 5 = Strong disagreement

Table 5: Distribution on Interpersonal relationships among male participants and level of significance with two-way ANOVA analysis

Trait	Most likely			Least likely			Two-way ANOVA analysis within the groups			
	Phot-A (N%)	Phot-B (N%)	Phot-C (N%)	Phot-A (N%)	Phot-B (N%)	Phot-C (N%)	DF	F-value	MS	Level of significance (P-value)
Get into a relationship easily?	80	60	40	10	30	19	8	100	140.8	<0.001*
Have a good married life?	75	56	45	16	36	22				<0.001*
Get divorced?	25	44	35	24	38	36				<0.001*
Have a better sexually active life?	80	63	47	20	40	32				<0.001*
Be infidel?	70	64	44	10	20	15				<0.001*
Be promiscuous?	65	55	46	14	36	27				<0.001*
Be a good parent?	70	56	50	20	44	31				<0.001*
Have a good social/friend circle?	80	58	49	16	29	18				<0.001*
Be a good son/daughter?	70	50	45	10	20	17				<0.001*

*P < 0.05 is considered statistically significant

Table 6: Distribution on Interpersonal relationships among female participants and level of significance with two-way ANOVA analysis

Trait	Most likely			Least likely			Two-way ANOVA analysis within the groups			
	Phot-A (N%)	Phot-B (N%)	Phot-C (N%)	Phot-A (N%)	Phot-B (N%)	Phot-C (N%)	DF	F-value	MS	Level of significance (P-value)
Get into a relationship easily?	87	75	60	15	24	24	8	307.9	83.74	<0.001*
Have a good married life?	71	65	58	18	32	32				<0.001*
Get divorced?	35	40	50	20	35	26				<0.001*
Have a better sexually active life?	86	73	60	12	30	22				<0.001*
Be infidel?	67	70	54	10	26	35				<0.001*
Be Promiscuous?	80	75	80	14	40	37				<0.001*
Be a good parent?	85	78	75	19	40	31				<0.001*
Have a good social/friend circle?	85	74	65	17	22	28				<0.001*
Be a good son/daughter?	80	75	68	20	25	37				<0.001*

halo effect,” linked positive personality traits such as trustworthiness, genuineness, kindness, and empathy.^[16] The results are incongruent with our study as we concluded, in the vital domain of personality traits, that the image of the person labeled as most attractive was indicative of being greatly trustworthy, interesting, strong, warm, empathetic, outgoing, and sexually

permissive. Facial attractiveness was demonstrated to be directly proportional to genuineness, sincerity, capability, and enthusiasm.

Increased facial attractiveness pointed out characteristics of kindness, which were reflected in the study published by Hamermesh *et al.* Augmented facial beauty indicated a

Table 7: Distribution of occupational index among the male participants with two-way ANOVA analysis

Trait	Most likely			Least likely			Two-way ANOVA analysis within the groups			
	Phot-A (N%)	Phot-B (N%)	Phot-C (N%)	Phot-A (N%)	Phot-B (N%)	Phot-C (N%)	DF	F	MS	Level of significance
Get a job easily?	84	68	55	10	30	40	4	36.78	188.5	<0.001*
Make better progress in life professionally?	74	62	52	12	34	41				<0.001*
Be rich?	75	60	45	20	36	40				<0.001*
Earning more?	75	63	44	25	38	42				<0.001*
Get promoted?	70	60	40	20	35	48				<0.001*

*P < 0.05 is considered statistically significant

Table 8: Distribution of female participants among occupational index and level of significance seen with two-way ANOVA analysis

Trait	Most likely			Least likely			Two-way ANOVA analysis within the groups			
	Phot-A (N%)	Phot-B (N%)	Phot-C (N%)	Phot-A (N%)	Phot-B (N%)	Phot-C (N%)	DF	F	MS	Level of significance
Get a job easily?	86	80	65	20	30	40	4	168.2	76.90	<0.001*
Make better progress in life professionally?	80	78	63	25	30	45				<0.001*
Be rich?	82	76	60	25	30	35				<0.001*
Earning more?	80	78	70	25	35	40				<0.001*
Get promoted?	80	75	65	30	40	45				<0.001*

*P < 0.05 is considered statistically significant

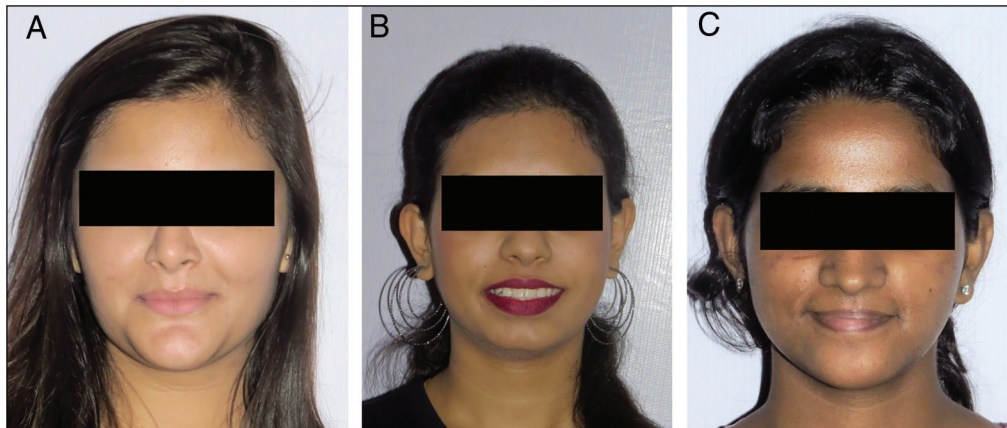


Figure 1: Facial appearance of the females in the study labelled A, B, C.

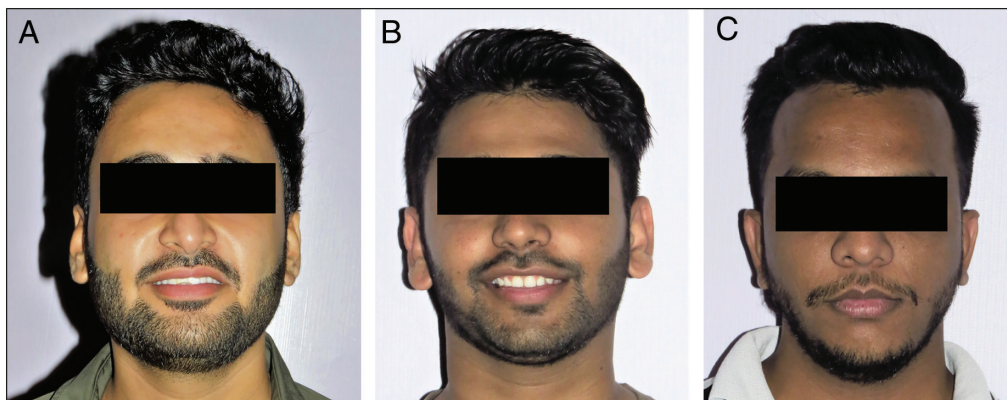


Figure 2: Facial appearance of the males in the study labelled A, B, C.

happier individual, in congruence with reports by others.^[17] They also scored higher in the sexually permissive and interesting parameters.^[18] Facial attractiveness also had a significant influence on mating behavior and friendships. Though this study did not assess any parameters on sexual permissiveness, it did show that the people were perceived to be more physically attractive and confident.

A meta-analysis conducted by Langlois *et al.*^[20] equated increased facial attractiveness to greater social appeal and interaction, quipping that beauty and interpersonal competence go hand in hand. Others also reported congruent results with our study, inferring that facial attractiveness plays a crucial role in a person's social life.^[21] The results of this study support the meta-analysis of increased social interaction and the building of social and self-confidence in the individual.

Socially desirable traits mirrored impeccably in attractive individuals, being more friendly, passionate, honest, and possessing leadership traits. Reports from Montepare and Zebrowitz^[22] validated the stance of the reporting of the current study by fortifying that beauty was intertwined with constructs of intelligence and sophistication. However, there was no substantial relation established between intelligence and facial attractiveness, according to Mitchem and Zietch.^[23]

Statistically significant ($P < 0.005$) findings in the subsets of interpersonal relationships have been reported in our study. The individual marked as most attractive was discerned to get into relationships easily and enjoyed a better sexual life. However, they were also labeled to be presumably more infidel, promiscuous, and had a propensity to divorce their partner. With the pursuit of pulchritude being not a trivial affair. Castillo and Petrie have also been vocal in their study regarding family dissolution and increased divorce rates among those perceived to have higher grades of facial attractiveness.^[24] Further, greater mating behavior and promiscuity have been documented by Fisman, Iyengar, and Driskell.^[25] However, the results were a takeoff to those published by Hamermesh and Abrevaya^[26] and Little *et al.*,^[27] which commented on depleted divorce rates and greater marital positivity with increased beauty scores. A plausible explanation to this could be attributed to Dornier's research which mentioned cognition and behavior as two seamless constructs which influence happier marriages, as compared to external physical pulchritude. Our research shows similar implications when it comes to the perception of beauty and the probable chance of the person being divorced, as almost a third of the participants saw the most attractive female being divorced.

Occupational and professional fields revealed that those with increased facial beauty tend to get professional placements and jobs easily and more rapidly, make better

progression in careers, earn more and have greater chances of being promoted. Sala *et al.*^[29] deliberating occupational prestige, write about the concept of "beauty premium" and justify that beauty pays. The results of our study were in conjunction with Langlois *et al.*^[20], who also mentioned that increased facial attractiveness led to greater occupational competency. Hamermesh and Abrevaya further fortify our stance that personal beauty better economic outcomes. Enhanced facial attractiveness also is related to positive hiring decisions and juror selections, adding the occupational benefit and increased job rankings during interviews. According to Stevenage and Luxen and Van de Vijver^[30], they had higher chances of being hired. The presumed most beautiful image in our study was ranked as the highest office bearer (CEO) in a circumstantial professional hierarchy, as compared to the others with a muted beauty emanation.

While the functional aspect of beauty refers to the natural course of action in a specific role, attractiveness is the impact that is made through the impression of a person. The present study explores both these horizons of an ambiguous concept that "beauty" is. This has been done by accessing the functionality of the subject's appearance in relation to the established standards of beauty. The various parameters studied, such as friendliness, self-happiness, physical attractiveness, etc., and their effect on outcomes related to the job, opportunities, career, relationships, etc., throw light upon the unexplored side of beauty standards.

CONCLUSION

The concept of beauty and pulchritude, though often debated and scrutinized open, yields substantial evidence that the might of beauty has implications manifold. It channelizes arenas and vistas for personal and professional growth and rings the impending need for such principles to be effectively documented.

The current study presents a solution to the dogma surrounding the facets of beauty in the Indian subcontinent. It endeavors in assimilating a multidimensional, multifaceted, and totalitarian viewpoint about what is beautiful. Fatigue bias and central tendency bias were tried to be reduced by restraining the options to each stem. However, the descriptive nature of the study warranted lucid aggregation of thoughts.

The authors express their intent and desire for this study to be replicated in other study settings so as to establish a concurrent contemporary global standard for what is beautiful. We further impress upon the fact that the difference across various socioeconomic strata be discerned, and the idea of beauty among rural and urban populations be weighed.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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