

# Social Media Use and Body Image Perception Among Young Adults: A Survey-Based Study Using the SATAQ-4

Rutuja Kharat, Suparna Deepak\*

Department of Biotechnology, Pillai Collage of Arts, Commerce and Science (Empowered Autonomous)  
New Panvel, Navi Mumbai

## Abstract

This study examined internalisation of appearance ideals and perceived appearance-related pressure from family, peers and media in a sample of 101 respondents who completed the 22-item Sociocultural Attitudes Towards Appearance Questionnaire-4 (SATAQ-4; Schaefer et al., 2015). A cross-sectional online survey was administered and scored using the five-subscale structure specified in the original validation study. All five subscales showed acceptable to excellent internal consistency (Cronbach's alpha .79 to .93). Subscale means clustered close to the scale midpoint, from 2.98 (SD = 1.02) for Pressures: Peers to 3.23 (SD = 0.90) for Internalization: Muscular/Athletic. All ten pairwise correlations among the subscales were positive and significant (.29 to .63), the strongest being between family and peer pressure. Two multiple regressions showed that the three pressure subscales together accounted for 31.3% of the variance in thin/low body fat internalisation and 21.3% in muscular/athletic internalisation; media pressure was the only unique predictor of the former and family pressure of the latter. Two constraints limit interpretation. The questionnaire contained no separate measure of social media use, and its media items refer to media broadly, covering television, magazines, the internet, movies, billboards and advertisements. It also contained no separate validated body image measure. The findings therefore describe sociocultural appearance attitudes within this sample rather than social media use or body image perception, and the cross-sectional design does not permit causal inference.

*Keywords:* SATAQ-4, appearance ideal internalisation, sociocultural pressure, body image, media influence, young adults, cross-sectional survey

## Social Media Use and Body Image Perception Among Young Adults: A Survey-Based Study Using the SATAQ-4

### Background of the Study

Research over the past three decades has consistently linked exposure to idealised appearance imagery with body dissatisfaction and disordered eating. A meta-analysis of 77 studies found small to moderate associations between media exposure and body dissatisfaction, thin-ideal internalisation, and eating-related beliefs among women (Grabe et al., 2008), and experimental work has shown that presenting thin media images reliably reduces body satisfaction relative to control images (Groesz et al., 2002). The framework organising most of this work is the tripartite influence model, which holds that three sources of influence — family, peers and media — shape body image mainly through internalisation of appearance ideals and appearance-based social comparison (Thompson et al., 1999). Keery et al.

(2004) found that these two mechanisms fully mediated the path from parental influence to body dissatisfaction and partially mediated the peer and media paths. The model matters here because it specifies the constructs the SATAQ-4 was built to measure.

### Social Media and Appearance Standards

Social media differs from television and print in ways that plausibly matter for appearance concerns: content is peer-produced, delivered continuously, open to numerical feedback, and routinely edited before posting. Perloff (2014) argued that these features make social media a distinct object of study rather than a digital extension of mass media. The empirical evidence supports an association, though a modest one. Saiphoo and Vahedi (2019) synthesised

63 samples comprising 36,552 participants and reported an overall correlation of .169 between social media use and body image disturbance. Holland and Tiggemann (2016) concluded from 20 studies that photo-based activities were especially salient and that the associations held for both women and men. Two points follow for the present study: the reported effects are small, and these studies measured social media use directly, whereas the present survey did not.

### **Body Image Perception**

Body image is a multidimensional construct covering a person's perceptions, thoughts, feelings and behaviours in relation to their own body (Cash, 2004), and researchers assess it through instruments targeting particular facets such as body satisfaction, appearance evaluation or body surveillance. The SATAQ-4 does not measure body image in this sense. It measures the sociocultural inputs and attitudes that the tripartite model positions as antecedents: the degree to which a person has adopted appearance ideals as personal standards, and the degree to which they perceive pressure from particular sources. Schaefer et al. (2015) reported that SATAQ-4 scores correlated in expected directions with separate body image, eating disturbance and self-esteem measures, which is evidence of convergent validity between distinct constructs rather than evidence that the SATAQ-4 is itself a body image measure.

### **Sociocultural Appearance Influences**

Family, peers and media are usually treated as partially independent channels. Family pressure may take the form of direct comment, encouragement to change weight or shape, or modelling of appearance concern. Peer pressure operates through appearance conversation, comparison within friendship groups and perceived norms. Media pressure refers to the aggregate message conveyed by television, magazines, film and advertising, and more recently by social platforms as well. The SATAQ-4 assesses all three with parallel item wording, which allows their relative magnitudes to be compared within the same sample.

### **Problem Statement**

Public discussion of body image among young adults frequently treats social media as the principal driver, a framing that runs ahead of what most survey data can support. Where a study measures perceived pressure from media in general, it cannot isolate social media; where it measures appearance ideal internalisation, it cannot speak directly to body satisfaction. Studies that blur these distinctions risk overstating both the specificity and the strength of their conclusions. There is therefore value in reporting a survey strictly within the limits of what its instrument measures.

### **Research Gap**

Most SATAQ-4 research has been conducted in North America, Europe and Australia. Validation work in South Asian populations remains sparse; Lewis-Smith et al. (2021) noted that few body image measures have been validated in Asian countries, including India, and adapted an earlier SATAQ subscale for urban Indian adolescents. A second gap concerns reporting practice: survey studies sometimes collapse the two internalisation subscales into one score or treat the media pressure subscale as a proxy for social media exposure, which departs from the instrument's validated structure and from its item content.

### **Research Aim**

The aim was to describe appearance ideal internalisation and perceived appearance-related pressure from family, peers and media within a sample of 101 survey respondents, using the validated five-factor structure of the SATAQ-4, and to examine how these constructs relate to one another.

### **Research Objectives**

1. To report item-level and subscale-level descriptive statistics for the 22 SATAQ-4 items in this sample.
2. To assess the internal consistency reliability of each subscale.
3. To examine bivariate associations among the two internalisation and three pressure subscales.
4. To determine how much variance in each internalisation subscale is accounted for by the three pressure subscales, and which sources contribute uniquely.

5. To compare the relative magnitude of perceived family, peer and media pressure.
6. To identify what the available data cannot address, and state those limitations explicitly.

### Research Questions

- RQ1. What levels of appearance ideal internalisation and perceived family, peer and media pressure were reported by this sample?
- RQ2. Are the SATAQ-4 subscales internally consistent in this sample?
- RQ3. How are the internalisation and pressure subscales associated with one another?
- RQ4. Do the three pressures jointly account for variance in each form of internalisation, and does any single source contribute uniquely?
- RQ5. Do perceived levels of pressure differ across the three sources?

### Research Hypotheses

The hypotheses were framed around the variables the questionnaire actually collected. Because no social media use measure and no separate body image measure were included, no hypothesis concerns either construct.

- H1. Each pressure subscale will correlate positively and significantly with thin/low body fat internalisation.
- H2. Each pressure subscale will correlate positively and significantly with muscular/athletic internalisation.
- H3. The three pressure subscales will correlate positively and significantly with one another.
- H4. The three pressures entered together will account for significant variance in thin/low body fat internalisation.
- H5. The three pressures entered together will account for significant variance in muscular/athletic internalisation.
- H6. Mean perceived pressure will differ significantly across the three sources.

### Scope of the Study

This study is confined to what 101 respondents reported on a single administration of the 22-item SATAQ-4. It does not measure social media use, does not measure body satisfaction with a validated instrument, does not include demographic variables,

and does not follow respondents over time. Findings apply to this sample and are not offered as estimates for young adults as a population.

### Literature Review

#### Social Media Use and Appearance

The accumulated evidence supports a reliable but small positive association between social media use and appearance concerns. Saiphoo and Vahedi (2019) pooled 63 independent samples and 36,552 participants to obtain a correlation of .169 with body image disturbance, with larger effects for cognitive and behavioural dimensions than for global evaluations and a weakening association as participant age increased. Holland and Tiggemann (2016) reached a compatible conclusion across 20 studies, finding that photo-based activities carried more weight than general platform use and that internalisation and appearance comparison appeared to mediate the relationship. Fardouly and Vartanian (2016) noted a complication: correlational and longitudinal studies show the association, but brief experimental exposure to one's own account has not reliably produced immediate increases in appearance concern, suggesting a cumulative rather than acute mechanism. Fardouly et al. (2015) examined Facebook exposure experimentally, and Tiggemann and Slater (2013) found in a survey of 1,087 girls that internet use was significantly related to thin-ideal internalisation, body surveillance and drive for thinness.

#### Body Image Perception

Cash (2004) framed body image as a person's internal view of their own body, encompassing perception, thought, feeling and belief. Two implications follow for measurement: no single scale captures the construct, and attitudes toward cultural appearance standards are conceptually upstream of body image itself, which is why the tripartite model treats internalisation as a mediator rather than an outcome. Body dissatisfaction has attracted most attention because prospective research identifies it as a risk factor for disordered eating, and the studies establishing those links measured it directly (Grabe et al., 2008).

### **Social Comparison**

Festinger (1954) proposed that people are driven to evaluate their opinions and abilities, that in the absence of objective standards they do so by comparing themselves with others, and that comparison is most informative when the target is similar to the self. Applied to appearance, the theory predicts that upward comparison with more idealised targets produces unfavourable self-evaluation, a prediction that has held up well: appearance comparison repeatedly emerges as a mediator between media exposure and body dissatisfaction (Holland & Tiggemann, 2016; Keery et al., 2004). Perloff (2014) argued that the similarity condition Festinger emphasised is more easily met on platforms populated by peers than in traditional media populated by professional models.

### **Appearance Ideals**

Appearance ideals are neither uniform nor stable. The thin ideal has dominated research on women, but a parallel literature documents a muscular and lean ideal applied to men and, increasingly, to women through fitness-oriented imagery. The SATAQ-4 was developed partly to accommodate this. Schaefer et al. (2015) observed that the earlier SATAQ-3 assumed respondents would interpret references to media ideals as referring to thinness, an assumption they regarded as no longer tenable, and therefore wrote separate item sets for thinness and low body fat on one hand and muscularity and an athletic build on the other.

### **Family Influence**

Family is the earliest and in some respects the most direct source of appearance-related pressure. Keery et al. (2004) found that internalisation and appearance comparison fully mediated the relationship between parental influence and body dissatisfaction in 325 adolescent girls, suggesting that family influence operates through the same psychological route as media influence rather than a separate one. The SATAQ-4 assesses this domain with four items covering perceived pressure to be thinner, to improve appearance, to reduce body fat and to get in better shape (Schaefer et al., 2015).

### **Peer Influence**

Peer influence becomes more prominent in adolescence and early adulthood. Schaefer et al. (2015) identified the absence of a peer pressure subscale as a specific limitation of the SATAQ-3 and included one in the revision; in their validation samples the Pressures: Peers subscale showed significant positive associations with disordered eating and significant negative associations with body satisfaction and self-esteem.

### **Media Influence**

The media construct in the SATAQ-4 is deliberately broad, which matters here because the questionnaire administered in this study instructed respondents to answer the media section with reference to television, magazines, the internet, movies, billboards and advertisements. Respondents were not asked about social media platforms specifically, so their answers cannot be read as reports about social media. The broader literature nonetheless establishes the relevance of the construct: Grabe et al. (2008) reported mean effect sizes of  $-.28$  for body dissatisfaction,  $-.39$  for thin-ideal internalisation and  $-.30$  for eating behaviours and beliefs, and Groesz et al. (2002) found reduced body satisfaction following experimental exposure to thin media images.

### **Social Media and Body Image**

Where social media has been measured directly, the pattern resembles the traditional media literature in direction but is smaller and more heterogeneous. Mingoia et al. (2017) found a weighted effect of  $.18$  between social networking site use and thin-ideal internalisation across six studies, with all six effect sizes positive. Saiphoo and Vahedi (2019) identified type of use as a moderator, converging with Holland and Tiggemann's (2016) finding that photo-based activity matters more than time on platform. Taken together, what people do on social media appears to matter more than how long they spend there.

### **Previous Empirical Research**

The SATAQ-4 has performed consistently across populations. Schaefer et al. (2015) validated the 22-item five-factor structure across four United States female samples, an international female sample from Italy, England and Australia, and a United States male

sample, reporting acceptable to excellent internal consistency throughout. Baceviciene et al. (2020) administered a Lithuanian translation to 1,850 university students, confirmed the five-factor structure, and reported Cronbach's alpha of .91 for the general scale, with subscale means from 1.6 (SD = 0.9) for peer pressure to 2.7 (SD = 1.2) for thin/low body fat internalisation. Cross-study comparison of absolute means should be treated cautiously given differences in sample composition, administration mode and translation. Work in Indian populations remains limited: Lewis-Smith et al. (2021) validated the Internalisation-General subscale of the SATAQ-3 among 1,432 urban Indian adolescents, reporting alphas of .88 for girls and .87 for boys, which supports the usability of SATAQ-family items with English-speaking urban Indian respondents even though it addressed an earlier version and an adolescent sample.

### Research Gap

Three gaps motivate this report. South Asian samples remain underrepresented in SATAQ-4 research; survey studies frequently conflate media pressure with social media exposure, which the item content does not license; and studies without a companion body image measure sometimes interpret internalisation scores as though they were body image scores. This study addresses the first partially, by reporting subscale statistics for a sample recruited in an Indian urban context, and the second and third by keeping the constructs distinct and stating what the data cannot support.

### Theoretical Framework

#### Social Comparison Theory

Festinger (1954) set out a small number of hypotheses about self-evaluation: people are driven to evaluate their opinions and abilities; where no objective basis for evaluation exists they evaluate by comparison with others; and the tendency to compare decreases as the difference between the other and the self increases. Appearance is a domain in which objective standards are largely unavailable, so evaluation proceeds socially. When the comparison targets available to a person are systematically more idealised than the general population, as with media imagery and curated self-presentation online, the

resulting comparisons are predominantly upward and unfavourable self-evaluation follows. This is the mechanism through which the theory explains why exposure to idealised imagery relates to body dissatisfaction.

#### Sociocultural Model of Body Image

The tripartite influence model (Thompson et al., 1999) specifies three formative influences — family, peers and media — that affect body image and eating behaviour through two mediating mechanisms: internalisation of appearance ideals and appearance comparison. Internalisation refers to the extent to which a person adopts a culturally promoted ideal as a personal standard for judging the self. Perceiving pressure and internalising an ideal are related but distinct; a person may recognise that others expect a particular appearance without adopting that expectation as their own. Keery et al. (2004) tested the model with 325 adolescent girls and found that internalisation and comparison fully mediated the path from parental influence to body dissatisfaction and partially mediated the peer and media paths. The model has since been replicated across samples and cultural contexts, and it provided the design rationale for the SATAQ-4 (Schaefer et al., 2015).

#### Application of the Theories to This Study

The two frameworks fit together: social comparison theory supplies the psychological mechanism, and the tripartite model supplies the structure, naming the sources of influence and positioning internalisation between those sources and body image outcomes. The present study occupies only part of that structure. The SATAQ-4 measures the three sources of pressure and two forms of internalisation; it does not measure appearance comparison, and the survey included no body image outcome. What can be examined here is the segment running from perceived pressure to internalisation. The downstream segment, from internalisation to body dissatisfaction or eating behaviour, is outside the reach of these data, and the mediating role of comparison cannot be examined at all. The regression models reported later should be read as descriptions of association within this segment, not as tests of the full model.

## Conceptual Framework

The conceptual model is drawn directly from the measured variables. Three perceived pressure variables are treated as the associated (independent) variables and two internalisation variables as the outcome (dependent) variables, following the tripartite model in which perceived sociocultural pressure precedes internalisation. Because the design is cross-sectional, the terms independent and

dependent describe the role of each variable in the statistical models only, and do not assert temporal or causal priority. The model proposes that higher perceived pressure from any source will be associated with higher internalisation of both ideals, that the three sources will themselves be intercorrelated, and that they may differ in how strongly they relate to each form of internalisation. Nothing in the model implies that pressure produces internalisation.

**Table 1**

*Variables in the Conceptual Model*

| Role       | Variable                           | Items          | Operational definition                                                                                                                    |
|------------|------------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Associated | Pressures: Family                  | 11–14          | Perceived pressure from family to be thinner, improve appearance, reduce body fat, get in better shape                                    |
| Associated | Pressures: Peers                   | 15–18          | Perceived pressure from close friends, classmates and other social contacts on the same four dimensions                                   |
| Associated | Pressures: Media                   | 19–22          | Perceived pressure from media, defined in the questionnaire as television, magazines, the internet, movies, billboards and advertisements |
| Outcome    | Internalization: Thin/Low Body Fat | 3, 4, 5, 8, 9  | Degree to which thinness and low body fat are adopted as personal appearance standards                                                    |
| Outcome    | Internalization: Muscular/Athletic | 1, 2, 6, 7, 10 | Degree to which muscularity and an athletic build are adopted as personal appearance standards                                            |

*Note.* Item-to-subscale assignment follows the validated structure reported by Schaefer et al. (2015). No variable represents social media use or body image perception, because neither was measured.

## Methodology

### Research Approach

A quantitative approach was adopted. The constructs of interest are defined by an existing validated instrument yielding interval-level subscale scores, and the research questions concern levels, associations and shared variance, all addressed through statistical analysis of numeric responses.

### Research Design

The study used a cross-sectional, non-experimental survey design. All measures were collected on a single occasion, with no manipulation of variables and no follow-up. This design supports description and estimation of association but not causal inference, and no causal language is used in reporting the results.

### Research Population

The intended population was young adults with access to an online questionnaire distributed in

English. Because no demographic items were included, the realised composition of the sample with respect to age, gender, education or any other characteristic cannot be described or verified from the data. This is a substantive limitation, discussed further below.

### Sample

The dataset contains 101 complete responses. Every respondent answered all 22 items, so there were no missing values and no cases required exclusion or imputation.

### Sampling Technique

Responses were obtained through non-probability convenience sampling via an online form. The probability of selection is therefore unknown and unequal, and the sample cannot be treated as representative of any defined population. Inferential statistics are reported because they quantify the strength and precision of relationships observed in the

data, but the resulting p values should be read as descriptive of this sample rather than as estimates of population parameters.

### Data Collection

Data were collected through a self-administered online questionnaire in which respondents read each statement and selected one of five agreement options. Responses were exported to a spreadsheet with one row per respondent and one column per item, together with a submission timestamp. The raw export was used for all analyses; no figures were read off summary charts.

### Research Instrument

The instrument consisted of the 22 SATAQ-4 items presented in four labelled sections. The first contained the ten internalisation items with no source-specific instruction. The three subsequent sections directed respondents to answer with reference to family (parents, brothers, sisters and relatives), peers (close friends, classmates and other social contacts), and media (television, magazines, the internet, movies, billboards and advertisements). No additional scales, demographic items or open-ended questions were included.

### SATAQ-4

The SATAQ-4 was developed by Schaefer et al. (2015) as a revision of the SATAQ-3. Exploratory and confirmatory factor analyses in a sample of 859 women produced a 22-item scale with five factors, confirmed in three further United States samples, an international female sample from Italy, England and Australia, and a United States male sample. The five subscales and their item assignments, as specified in that publication, are: Internalization: Thin/Low Body Fat (items 3, 4, 5, 8, 9); Internalization: Muscular/Athletic (items 1, 2, 6, 7, 10); Pressures: Family (items 11–14); Pressures: Peers (items 15–18); and Pressures: Media (items 19–22).

This assignment was verified against the source publication before scoring, and it is the reason the ten internalisation items are not treated here as a single subscale. Although items 1 to 10 appear consecutively, they load on two distinct factors, and treating them as one block would depart from the validated structure and obscure a difference the

instrument was revised to capture. All 22 items are keyed in the same direction, with higher agreement indicating greater internalisation or greater perceived pressure; every item was inspected before scoring and none required reverse scoring. Subscale scores were computed as the mean of the constituent items, so each ranges from 1 to 5 and is comparable across subscales of differing length.

### Questionnaire Structure

Section 1 comprised items 1 to 10 (internalisation), Section 2 items 11 to 14 (family), Section 3 items 15 to 18 (peers), and Section 4 items 19 to 22 (media). Full item text appears in Appendix A.

### Measurement and Coding

Responses were recorded on a five-point agreement scale anchored at Strongly disagree and Strongly agree, coded 1 through 5 so that higher values indicate greater endorsement. One departure from the original instrument should be noted: Schaefer et al. (2015) administered items on a five-point scale anchored at 1 (definitely disagree) and 5 (definitely agree), whereas this administration used a conventional agreement format with an explicitly neutral midpoint. The number of options and the scoring direction are unchanged, so the scoring procedure and the 1-to-5 range are preserved, but the verbal anchors differ and comparison of absolute means with studies using the original anchors should be made cautiously.

### Reliability and Validity

Internal consistency was assessed for each subscale using Cronbach's alpha with 95% confidence intervals derived from the F distribution, supported by corrected item-total correlations and alpha-if-item-deleted values. Content validity rests on the instrument's development history. Construct validity in this sample can be assessed only indirectly, through the pattern of intercorrelations among subscales, which should be positive but not redundant. No confirmatory factor analysis was conducted: with 101 cases and 22 items the case-to-parameter ratio is too low for stable estimation, and reporting fit indices from such a model would give a misleading impression of precision. The factor structure is therefore adopted from the validation

literature rather than re-established here. Convergent and discriminant validity against external criteria could not be assessed, because no other instrument was administered.

### **Ethical Considerations**

Participation was voluntary and responses were submitted anonymously. The dataset contains no names, contact details, IP addresses or other identifying information. Items concern appearance attitudes and perceived social pressure, a topic that may be sensitive, so no item required disclosure of weight, body measurements or eating behaviour. Participant information and consent arrangements are summarised in Appendix C.

### **Data Analysis Techniques**

Analyses were conducted on the raw exported responses using Python 3 with the pandas, NumPy and SciPy libraries. Frequencies, percentages, means, standard deviations, skewness and kurtosis were computed at item and subscale level. Cronbach's alpha was computed for each subscale and for the 22-item total. Pearson correlations were computed among the five subscales; Pearson coefficients were chosen because subscale scores are means of multiple items and approximate interval measurement, distributional assumptions were checked using the Shapiro-Wilk test alongside skewness and kurtosis, Spearman correlations were computed as a robustness check, and a Holm-Bonferroni correction was applied across the ten pairwise tests.

Two multiple linear regressions were estimated, each with the three pressure subscales as predictors and one internalisation subscale as the outcome. Multicollinearity was assessed using variance

inflation factors, independence of residuals using the Durbin-Watson statistic, normality of residuals using the Shapiro-Wilk test, and homoscedasticity using a Breusch-Pagan test; effect size was quantified using  $R^2$  and Cohen's  $f^2$ , interpreted against the benchmarks proposed by Cohen (1988). One-sample  $t$  tests compared each subscale mean against the scale midpoint of 3, with Cohen's  $d$  as the effect size. A Friedman test compared the three pressure subscales, which are repeated measures on the same respondents, with paired  $t$  tests and Wilcoxon signed-rank tests as follow-ups against a Bonferroni-adjusted criterion.

No independent-samples  $t$  test or between-groups ANOVA was conducted, because such tests require a grouping variable and the questionnaire collected none. This is stated explicitly rather than omitted, because comparisons by gender or age group would ordinarily be expected in a study of this kind. Statistical significance was evaluated at the conventional .05 level, with effect sizes reported alongside every test.

## **Results**

### **Presentation of Data and Statistical Analysis**

The final dataset contained 101 complete responses to all 22 SATAQ-4 items, yielding 2,222 item-level observations with no missing values. Results are presented using frequencies, percentages, means, standard deviations, reliability coefficients, correlation analysis, regression analysis, and repeated-measures comparison. No new observations were added beyond the analysed dataset.

#### **1. Overall Response Distribution**

Across all 22 items, Disagree was selected on 29.1% of responses ( $n = 647$ ), Agree on 29.7% ( $n = 661$ ), Neutral on 20.5% ( $n = 456$ ), Strongly agree on 13.2% ( $n = 293$ ), and Strongly disagree on 7.4% ( $n = 165$ ).

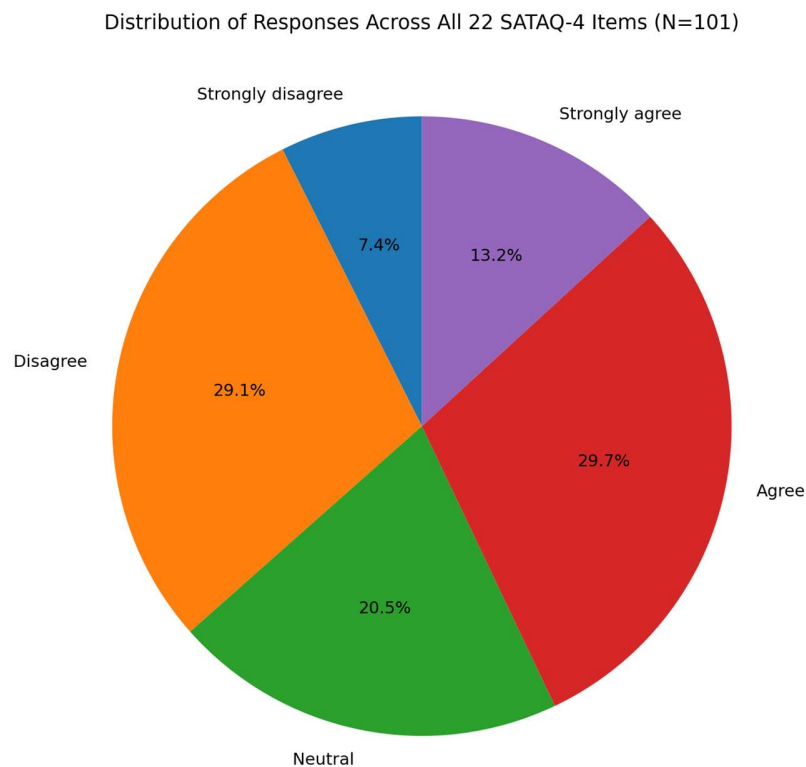


Figure 1. Distribution of response categories across all 22 SATAQ-4 items (N = 101).

## 2. Subscale Comparison

Means ranged from 2.98 to 3.23, placing all five domains close to the neutral midpoint of 3.00.

| Subscale                              | k | Mean | SD   | Median | Cronbach's $\alpha$ |
|---------------------------------------|---|------|------|--------|---------------------|
| Internalization:<br>Thin/Low Body Fat | 5 | 3.16 | 0.83 | 3.00   | .79                 |
| Internalization:<br>Muscular/Athletic | 5 | 3.23 | 0.90 | 3.20   | .85                 |
| Pressures: Family                     | 4 | 3.13 | 0.90 | 3.00   | .82                 |
| Pressures: Peers                      | 4 | 2.98 | 1.02 | 3.00   | .89                 |
| Pressures: Media                      | 4 | 3.07 | 1.15 | 3.00   | .93                 |

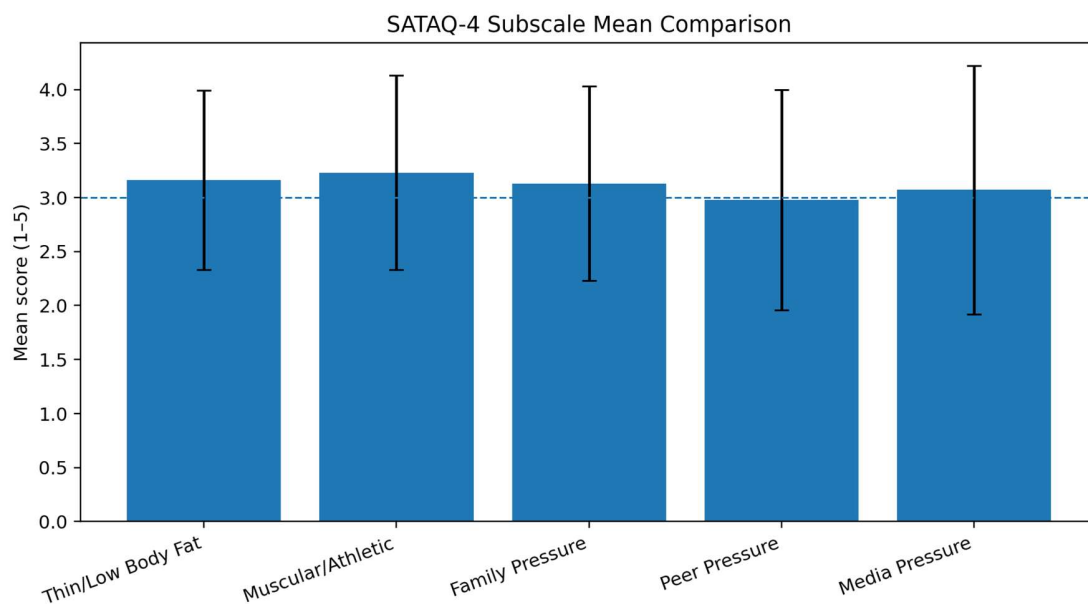


Figure 2. Comparison of SATAQ-4 subscale means. Error bars represent  $\pm 1$  SD; dashed line marks midpoint (3.00).

### 3. Item-Level Data Presentation

Item means ranged from 2.58 to 3.66. The highest mean was item 14, family encouragement to get in better shape ( $M = 3.66$ ,  $SD = 0.95$ ; 67.3% agreement). The lowest was item 11, family pressure to look thinner ( $M = 2.58$ ,  $SD = 1.20$ ; 22.8% agreement).

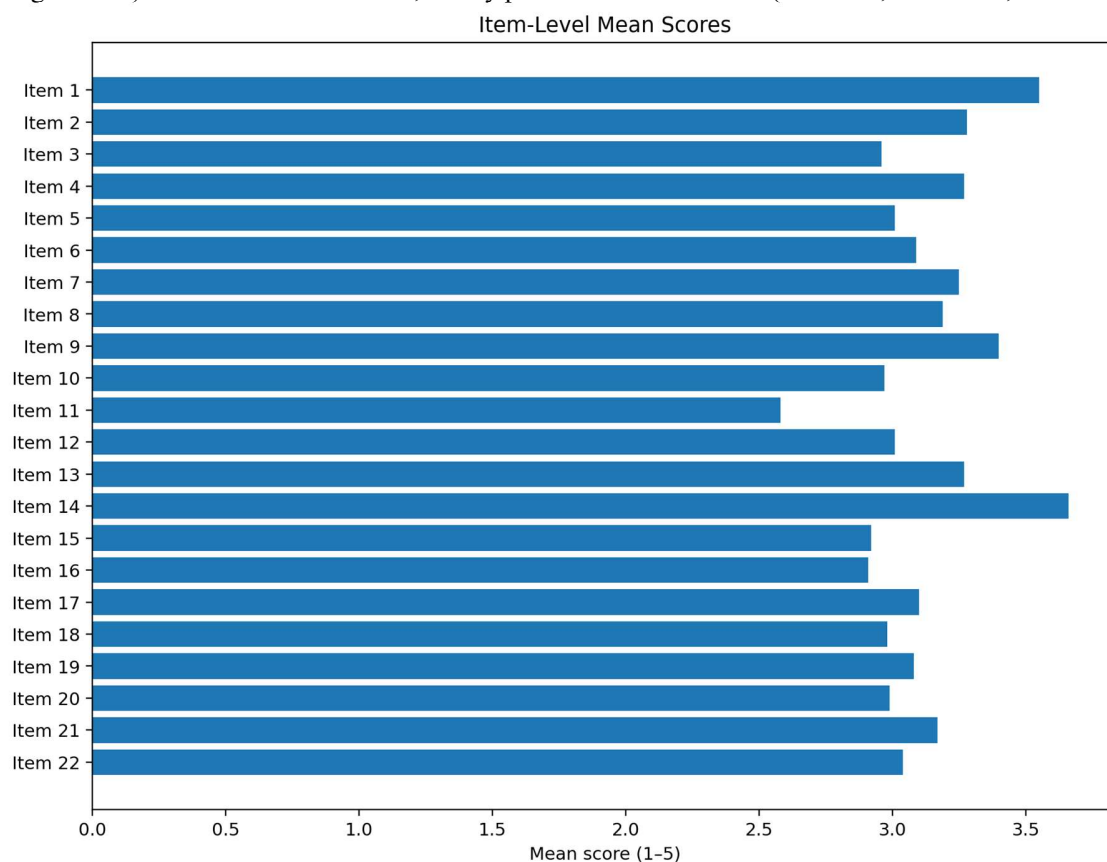


Figure 3. Item-level mean scores for all 22 SATAQ-4 items.

#### 4. Comparison of Internalisation and Pressure Domains

#### 5. Chi-Square Analysis: Friedman Test

Because the three pressure scores are repeated measurements from the same 101 respondents, the Friedman test was used. This produces a chi-square statistic. The test gave  $\chi^2(2) = 1.73$ ,  $p = .421$ , indicating no statistically significant difference among family, peer and media pressure in this sample; therefore H6 was not supported.

Statistical note: a Pearson chi-square test of independence was not conducted because the questionnaire did not collect categorical grouping variables. The Friedman chi-square above is the chi-square analysis supported by the actual dataset.

#### 6. Correlation Analysis

All ten pairwise correlations among the five SATAQ-4 subscales were positive and statistically significant after Holm-Bonferroni correction. The strongest association was between family and peer pressure ( $r = .63$ ,  $p < .001$ ); the

weakest was between muscular/athletic internalisation and media pressure ( $r = .29$ ,  $p = .003$ ).

#### 7. Multiple Regression Analysis

The three pressure subscales jointly explained 31.3% of the variance in thin/low body fat internalisation,  $R^2 = .313$ , adjusted  $R^2 = .292$ ,  $F(3, 97) = 14.73$ ,  $p < .001$ . Media pressure was the only statistically significant unique predictor ( $\beta = .26$ ,  $p = .012$ ). For muscular/athletic internalisation, the predictors explained 21.3% of the variance,  $R^2 = .213$ , adjusted  $R^2 = .189$ ,  $F(3, 97) = 8.75$ ,  $p < .001$ ; family pressure was the only statistically significant unique predictor ( $\beta = .24$ ,  $p = .044$ ).

#### 8. Reliability Analysis

All five subscales showed acceptable to excellent internal consistency, with Cronbach's alpha ranging from .79 to .93. The full 22-item scale had  $\alpha = .92$ ; however, the validated SATAQ-4 structure is organised into five subscales, so the total score was not used for substantive analyses.

| Outcome                                | R <sup>2</sup>                  | Adjusted R <sup>2</sup> | F                                                   | Overall p | Unique significant predictor                   |
|----------------------------------------|---------------------------------|-------------------------|-----------------------------------------------------|-----------|------------------------------------------------|
| Thin/Low Body Fat internalisation      | .313                            | .292                    | 14.73                                               | < .001    | Media pressure ( $\beta = .26$ , $p = .012$ )  |
| Muscular/Athletic internalisation      | .213                            | .189                    | 8.75                                                | < .001    | Family pressure ( $\beta = .24$ , $p = .044$ ) |
| Relationship                           | Pearson r                       |                         | p-value                                             |           |                                                |
| Thin/Low Body Fat – Muscular/Athletic  | .48                             |                         | < .001                                              |           |                                                |
| Thin/Low Body Fat – Family             | .45                             |                         | < .001                                              |           |                                                |
| Thin/Low Body Fat – Peers              | .48                             |                         | < .001                                              |           |                                                |
| Thin/Low Body Fat – Media              | .47                             |                         | < .001                                              |           |                                                |
| Muscular/Athletic – Family             | .41                             |                         | < .001                                              |           |                                                |
| Muscular/Athletic – Peers              | .42                             |                         | < .001                                              |           |                                                |
| Muscular/Athletic – Media              | .29                             |                         | .003                                                |           |                                                |
| Family – Peers                         | .63                             |                         | < .001                                              |           |                                                |
| Family – Media                         | .45                             |                         | < .001                                              |           |                                                |
| Peers – Media                          | .55                             |                         | < .001                                              |           |                                                |
| Test                                   | Variables compared              | $\chi^2$                | df                                                  | p-value   | Decision                                       |
| Friedman repeated-measures test        | Family, Peer and Media pressure | 1.73                    | 2                                                   | .421      | Not significant; H6 not supported              |
| Comparison                             | Observed values                 |                         | Statistical result                                  |           | Interpretation                                 |
| Thin/Low Body Fat vs Muscular/Athletic | 3.16 vs 3.23                    |                         | $t(100) = -0.72$ , $p = .474$ ; Wilcoxon $p = .407$ |           | No significant difference                      |
| Family vs Peers pressure               | 3.13 vs 2.98                    |                         | $t(100) = 1.85$ , $p = .067$                        |           | Not significant                                |
| Family vs Media pressure               | 3.13 vs 3.07                    |                         | $p = .570$                                          |           | Not significant                                |
| Peers vs Media pressure                | 2.98 vs 3.07                    |                         | $p = .377$                                          |           | Not significant                                |

#### Discussion

#### Interpretation of Major Findings

The clearest finding is also the least dramatic: this sample reported moderate levels of appearance ideal internalisation and moderate perceived pressure from all three sources. Every subscale mean fell between 2.98 and 3.23, only muscular/athletic internalisation

differed significantly from the midpoint, and roughly half the sample sat above the midpoint on each subscale. Reading these data as evidence of severe or widespread appearance pressure would not be warranted.

What the data show more robustly is structure. The five subscales hang together internally and relate to

one another as the tripartite influence model predicts, with the three pressures jointly accounting for around a third of the variance in thinness-oriented internalisation and a fifth in muscularity-oriented internalisation — substantial proportions for a model with three predictors and no controls, replicating in a small convenience sample a pattern established in much larger validation studies (Schaefer et al., 2015). A third feature deserves comment: responses to the media items were the most dispersed of any subscale, with 48.5% below the midpoint and 29.7% at 4.00 or above. Media pressure was not experienced uniformly, which is consistent with Perloff's (2014) argument that individual vulnerability characteristics moderate media effects, although the present data cannot identify what distinguishes high from low scorers.

### **Internalisation of Appearance Ideals**

Thinness-oriented and muscularity-oriented ideals were endorsed at statistically indistinguishable levels (3.16 versus 3.23,  $p = .474$ ), which is worth noting because much discussion of body image among young people still centres on the thin ideal. In this sample the desire to look athletic, muscular or lean was reported at least as often, and item 1 ("It is important for me to look athletic") drew 61.4% agreement, the second highest of any item. Schaefer et al. (2015) separated these constructs precisely because the SATAQ-3 had assumed that references to media ideals would be read as references to thinness; the present results support that judgement, since scoring the ten internalisation items as a single block would have concealed the distinct patterns that emerged in the two regression models. The two subscales correlated at .48, sharing under a quarter of their variance, so endorsing one ideal does not imply endorsing the other.

### **Family Pressure**

Family pressure produced the widest item-level spread in the dataset: encouragement to get in better shape was endorsed by 67.3% of respondents while pressure specifically to look thinner was endorsed by 22.8%, a gap of nearly 45 percentage points between two items in the same subscale. This suggests that family appearance messages here were more often framed around fitness than around weight, though

interpretation should stop short of the obvious inference, since the items measure perceived pressure rather than what family members actually said and a message framed as encouragement to exercise can still function as appearance pressure. Family pressure was the only unique predictor of muscular/athletic internalisation ( $\beta = .24$ ,  $p = .044$ ). Keery et al. (2004) found that internalisation fully mediated the path from parental influence to body dissatisfaction in adolescent girls, and the present finding is consistent with family remaining relevant beyond adolescence — though with a cross-sectional design and a coefficient this close to threshold, the point is suggestive rather than established.

### **Peer Pressure**

Peer pressure returned the lowest mean of the five subscales (2.98) and did not reach significance as a unique predictor in either model, although it approached it in both ( $p = .066$  and  $p = .063$ ) and correlated with thin/low body fat internalisation as strongly as any other source bivariately ( $r = .48$ ). The most likely explanation is its correlation with family pressure ( $r = .63$ , the strongest in the matrix): when two predictors share 40% of their variance, the unique contribution of each is attenuated even when their joint contribution is substantial. That correlation is itself of interest, possibly reflecting overlapping social environments, a general tendency to perceive appearance pressure across relationships, or shared method variance from near-identical item wording across the two sections.

### **Media Pressure**

Media pressure was the only unique predictor of thin/low body fat internalisation ( $\beta = .26$ ,  $p = .012$ ) and the weakest correlate of muscular/athletic internalisation ( $r = .29$ ). This asymmetry appears consistently in both the correlation matrix and the regression models, and it aligns with a large body of media effects research in which the ideal under study was thinness: Grabe et al. (2008) reported a mean effect of  $-.39$  for thin-ideal internalisation across 77 studies, Groesz et al. (2002) found reduced body satisfaction after experimental exposure to thin media images, and Mingoia et al. (2017) obtained a weighted effect of .18 for social networking site use and thin-ideal internalisation.

A boundary needs restating here, because this is where misinterpretation is most likely. The media items in this questionnaire referred to television, magazines, the internet, movies, billboards and advertisements; they are not social media items. The finding above concerns perceived pressure from media broadly construed and cannot be reported as a finding about social media, since nothing in this dataset indicates how much time respondents spent on social platforms, which platforms they used, or what they did there. This matters beyond pedantry: Holland and Tiggemann (2016) and Saiphoo and Vahedi (2019) both found that type of social media activity mattered more than quantity, and a media pressure score offers no purchase on that distinction.

### **Relationship to Previous Research**

The reliability results replicate previous work closely. Schaefer et al. (2015) described SATAQ-4 subscale reliability as acceptable to excellent across all their samples and Baceviciene et al. (2020) reported .91 for the general scale, so the present values (.79 to .93 for subscales, .92 overall) sit comfortably within the established range. Subscale means are harder to compare: Baceviciene et al. (2020) reported means from 1.6 to 2.7, appreciably lower than the 2.98 to 3.23 range found here, and the modified response anchors, sample composition and cultural context could all contribute, so no conclusion should be drawn from the difference in absolute values. The relative ordering of subscales and the pattern of intercorrelations are the more comparable quantities, and both resemble what Schaefer et al. (2015) reported.

One comparison this study cannot make should be acknowledged. The meta-analytic literature on social media and body image reports effects of roughly  $r = .17$  to  $.18$  (Mingoia et al., 2017; Saiphoo & Vahedi, 2019), whereas the correlations reported here range from  $.29$  to  $.63$ . These are not comparable quantities — the present figures describe associations among sociocultural attitudes measured with a single instrument, not associations between a behavioural exposure and a body image outcome — and placing them side by side would be misleading.

### **Theoretical Implications**

The results are consistent with the internalisation half of the tripartite influence model: all three sources named by Thompson et al. (1999) related positively to both forms of internalisation and jointly accounted for a meaningful share of variance in each. They also suggest a refinement worth examining, since the two regression models produced different profiles, with media pressure the unique predictor for thinness-oriented internalisation and family pressure for muscularity-oriented internalisation. If this holds in larger samples it would imply that the three sources are not interchangeable and that the appropriate specification of the model may depend on which ideal is under study, something the model does not predict in its standard form. Given the modest sample and the number of coefficients near the significance boundary, this is best treated as a hypothesis for future testing. The results say nothing about social comparison, the model's second mediating mechanism, because comparison was not measured; Festinger's (1954) framework is invoked here as background theory rather than as something these data test.

### **Practical Implications**

Three implications follow, each qualified by the study's limitations. Interventions addressing only media influence may miss a substantial part of the picture, since family and peer pressure were reported at levels statistically indistinguishable from media pressure and family pressure was the stronger unique predictor of one internalisation outcome, so programmes designed around media literacy alone would not engage those channels. The divergence between items 11 and 14 suggests that the framing of appearance-related communication may be perceived differently even when the underlying message is similar, so guidance distinguishing health-oriented from weight-oriented framing may be worth developing, although these data can only raise the question. Finally, the prominence of muscularity-oriented internalisation argues against designing body image resources exclusively around thinness. These implications are offered for contexts resembling the present sample, not as recommendations for population-level policy, which

101 responses from an unspecified convenience sample cannot support.

## Conclusion

This study analysed 101 complete SATAQ-4 responses. The data showed moderate levels of appearance-ideal internalisation and perceived pressure, with subscale means ranging from 2.98 to 3.23. Thin/low body fat and muscular/athletic internalisation did not differ significantly. The three pressure domains were also statistically indistinguishable in the Friedman test,  $\chi^2(2) = 1.73$ ,  $p = .421$ . The instrument demonstrated good internal consistency ( $\alpha = .79-.93$ ). All five subscales were positively associated, and the three pressure variables jointly explained 31.3% of the variance in thin/low body fat internalisation and 21.3% in muscular/athletic internalisation. Media pressure was the only unique predictor of thin/low body fat internalisation, whereas family pressure was the only unique predictor of muscular/athletic internalisation.

Implications: the findings indicate that appearance-related influences in this sample were distributed across family, peer and broad media sources rather than showing a statistically distinguishable level for one source. The item-level difference between fitness-oriented and thinness-oriented family messages also indicates that the framing of appearance-related communication may matter.

The conclusions are limited to the measured constructs and the 101 respondents. Social media use was not separately measured, no validated body-image outcome measure was included, and demographic variables were not collected. Accordingly, the findings should not be presented as evidence that social media use caused changes in body image or as population estimates for young adults.

## Recommendations

1. Include a direct measure of social media exposure, including time, platforms and type of engagement, in future studies.
2. Add a validated body-image measure when the research question specifically concerns body-image perception, satisfaction or disturbance.
3. Collect demographic variables such as age, gender and educational level to enable appropriate subgroup comparisons.
4. Replicate the study with a larger and more diverse sample and clearly documented recruitment procedures to improve precision and external validity.
5. Consider longitudinal designs for examining temporal relationships. Where categorical variables are collected, Pearson chi-square tests of independence may be added when assumptions are satisfied; the present dataset did not support such an analysis.

## Limitations

The most consequential limitation is that no social media use measure exists in the data. The study title refers to social media, but the media items were administered under an instruction defining media as television, magazines, the internet, movies, billboards and advertisements, so no inference about social media use, platform choice or online activity can be drawn. Second, no validated body image measure was administered: the SATAQ-4 measures internalisation and perceived sociocultural pressure, not body satisfaction, appearance evaluation, body esteem or body surveillance as defined by Cash (2004), so the results should not be described as body image findings. Third, the response anchors were modified from the original, which leaves the scoring range and direction unaffected but may make absolute means less directly comparable with other studies. Fourth, all variables come from one self-report instrument administered on one occasion, so common method variance may inflate the observed intercorrelations, and the near-identical wording across the three pressure sections may contribute to the strong family-peer association independently of any substantive relationship.

No demographic data were collected, so age, gender, education and location are unknown for all respondents; no subgroup comparison was possible, no test involving a grouping variable could be conducted, and the sample's correspondence to the intended population cannot be verified. The non-probability convenience sample means selection probabilities are unknown and unequal, so results should not be generalised beyond the 101 respondents who provided them.  $N = 101$  is adequate for the correlations and three-predictor regressions reported here but too small for confirmatory factor analysis or for detecting small effects with adequate power, and several regression coefficients fell close to the .05 boundary, so their significance or non-significance should not be over-read. The cross-sectional design means associations cannot establish direction of effect: it is equally consistent with these data that perceived pressure precedes internalisation, that internalisation heightens perception of pressure, or that a third factor produces both.

Analytically, the five-factor structure was adopted from Schaefer et al. (2015) rather than confirmed

here, because 101 cases provide an insufficient case-to-parameter ratio. Three of the five subscales departed from normality on the Shapiro-Wilk test; non-parametric checks agreed with the parametric results throughout, but those results carry a corresponding degree of approximation. No mediation analysis was possible, because appearance comparison was not measured and no downstream body image outcome was available.

### Future Research

The most direct extension would administer the SATAQ-4 alongside two additional instruments: a validated measure of social media use capturing type as well as quantity of engagement, and a validated body image measure such as a body satisfaction or appearance evaluation scale. That combination would permit the study this title implies but these data cannot deliver, and would allow the association between social media use and body image to be estimated while holding sociocultural pressures constant. A second priority is demographic measurement: gender differences in appearance ideal internalisation are well documented, and the divergence found here between thinness-oriented and muscularity-oriented internalisation would be considerably more interpretable with gender recorded.

Third, the source-specific pattern observed in the two regression models is worth testing directly in a larger sample with adequate power; if it replicates, it would suggest that the tripartite model's three influence sources operate differently depending on which ideal is at issue. Fourth, longitudinal designs would address the directional ambiguity that limits the present findings, since Fardouly and Vartanian (2016) noted that longitudinal studies suggest the social media–body image association strengthens over time. Fifth, validation work in Indian and wider South Asian populations remains sparse: Lewis-Smith et al. (2021) validated an earlier SATAQ subscale among urban Indian adolescents, and comparable work with the full SATAQ-4 in adult Indian samples would establish whether the five-factor structure holds in this context. Finally, the wide dispersion in media pressure scores invites investigation of what distinguishes those who perceive strong media pressure from those who perceive little, a question

Perloff (2014) framed in terms of individual vulnerability characteristics.

### References

1. Baceviciene, M., Jankauskiene, R., & Balciuniene, V. (2020). Validation of the Lithuanian version of the Sociocultural Attitudes towards Appearance Questionnaire-4 (SATAQ-4) in a student sample. *International Journal of Environmental Research and Public Health*, 17(3), Article 932. <https://doi.org/10.3390/ijerph17030932>
2. Cash, T. F. (2004). Body image: Past, present, and future. *Body Image*, 1(1), 1–5.
3. Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.
4. Fardouly, J., Diedrichs, P. C., Vartanian, L. R., & Halliwell, E. (2015). Social comparisons on social media: The impact of Facebook on young women's body image concerns and mood. *Body Image*, 13, 38–45. <https://doi.org/10.1016/j.bodyim.2014.12.002>
5. Fardouly, J., & Vartanian, L. R. (2016). Social media and body image concerns: Current research and future directions. *Current Opinion in Psychology*, 9, 1–5. <https://doi.org/10.1016/j.copsyc.2015.09.005>
6. Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7(2), 117–140. <https://doi.org/10.1177/001872675400700202>
7. Grabe, S., Ward, L. M., & Hyde, J. S. (2008). The role of the media in body image concerns among women: A meta-analysis of experimental and correlational studies. *Psychological Bulletin*, 134(3), 460–476. <https://doi.org/10.1037/0033-2909.134.3.460>
8. Groesz, L. M., Levine, M. P., & Murnen, S. K. (2002). The effect of experimental presentation of thin media images on body satisfaction: A meta-analytic review. *International Journal of Eating Disorders*, 31(1), 1–16. <https://doi.org/10.1002/eat.10005>
9. Holland, G., & Tiggemann, M. (2016). A systematic review of the impact of the use of social networking sites on body image and disordered eating outcomes. *Body Image*, 17, 100–110. <https://doi.org/10.1016/j.bodyim.2016.02.008>
10. Keery, H., van den Berg, P., & Thompson, J. K. (2004). An evaluation of the Tripartite Influence Model of body dissatisfaction and eating disturbance with adolescent girls. *Body Image*, 1(3), 237–251. <https://doi.org/10.1016/j.bodyim.2004.03.001>
11. Lewis-Smith, H., Garbett, K., Chaudhry, A., Uglik-Marucha, N., Vitoratou, S., Dhillon, M., Shroff, H., & Diedrichs, P. C. (2021). Adaptation and validation of the Internalisation-General subscale of the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ-3) in English among urban Indian adolescents. *Body Image*, 36, 254–262. <https://doi.org/10.1016/j.bodyim.2020.12.004>

12. Mingoia, J., Hutchinson, A. D., Wilson, C., & Gleaves, D. H. (2017). The relationship between social networking site use and the internalization of a thin ideal in females: A meta-analytic review. *Frontiers in Psychology*, 8, Article 1351. <https://doi.org/10.3389/fpsyg.2017.01351>
13. Perloff, R. M. (2014). Social media effects on young women's body image concerns: Theoretical perspectives and an agenda for research. *Sex Roles*, 71(11–12), 363–377. <https://doi.org/10.1007/s11199-014-0384-6>
14. Saiphoo, A. N., & Vahedi, Z. (2019). A meta-analytic review of the relationship between social media use and body image disturbance. *Computers in Human Behavior*, 101, 259–275. <https://doi.org/10.1016/j.chb.2019.07.028>
15. Schaefer, L. M., Burke, N. L., Thompson, J. K., Dedrick, R. F., Heinberg, L. J., Calogero, R. M., Bardone-Cone, A. M., Higgins, M. K., Frederick, D. A., Kelly, M., Anderson, D. A., Schaumberg, K., Nerini, A., Stefanile, C., Dittmar, H., Clark, E., Adams, Z., Macwana, S., Klump, K. L., ... Swami, V. (2015). Development and validation of the Sociocultural Attitudes Towards Appearance Questionnaire-4 (SATAQ-4). *Psychological Assessment*, 27(1), 54–67. <https://doi.org/10.1037/a0037917>
16. Thompson, J. K., Heinberg, L. J., Altabe, M., & Tantleff-Dunn, S. (1999). *Exacting beauty: Theory, assessment, and treatment of body image disturbance*. American Psychological Association.
17. Tiggemann, M., & Slater, A. (2013). NetGirls: The Internet, Facebook, and body image concern in adolescent girls. *International Journal of Eating Disorders*, 46(6), 630–633. <https://doi.org/10.1002/eat.22141>

## Appendix A

### Questionnaire

The questionnaire consisted of the 22 items of the SATAQ-4 (Schaefer et al., 2015) in four sections, each item answered on a five-point scale: Strongly disagree, Disagree, Neutral, Agree, Strongly agree. Section labels below paraphrase the instructions shown to respondents. No demographic items, no social media use items and no separate body image items were included.

| Section / instruction given to respondents                                                 | Item | Item wording                                                   |
|--------------------------------------------------------------------------------------------|------|----------------------------------------------------------------|
| Section 1: Internalisation (no source-specific instruction given)                          | 1    | It is important for me to look athletic.                       |
|                                                                                            | 2    | I think a lot about looking muscular.                          |
|                                                                                            | 3    | I want my body to look very thin.                              |
|                                                                                            | 4    | I want my body to look like it has little fat.                 |
|                                                                                            | 5    | I think a lot about looking thin.                              |
|                                                                                            | 6    | I spent a lot of time doing things to look more athletic.      |
|                                                                                            | 7    | I think a lot about looking athletic.                          |
|                                                                                            | 8    | I want my body to look very lean.                              |
|                                                                                            | 9    | I think a lot about having very little body fat.               |
|                                                                                            | 10   | I spend a lot of time doing things to look more muscular.      |
| Section 2: Family (parents, brothers, sister relatives)                                    | 11   | I feel pressure from family members to look thinner.           |
|                                                                                            | 12   | I feel pressure from family members to improve my appearance.  |
|                                                                                            | 13   | Family members encourage me to decrease my level of body fat.  |
| Section 3: Peers (close friends, classmates, other social contacts)                        | 14   | Family members encourage me to get in better shape.            |
|                                                                                            | 15   | My peers encourage me to get thinner.                          |
|                                                                                            | 16   | I feel pressure from my peers to improve my appearance.        |
|                                                                                            | 17   | I feel pressure from my peers to look in better shape.         |
| Section 4: Media (television, magazines, the internet, movies, billboards, advertisements) | 18   | I get pressure from my peers to decrease my level of body fat. |
|                                                                                            | 19   | I feel pressure from the media to look in better shape.        |
|                                                                                            | 20   | I feel pressure from the media to look thinner.                |
|                                                                                            | 21   | I feel pressure from the media to improve my appearance.       |

| Section / instruction given to respondents | Item | Item wording                                                     |
|--------------------------------------------|------|------------------------------------------------------------------|
|                                            | 22   | I feel pressure from the media to decrease my level of body fat. |

*Note.* Although the Section 4 heading uses the word "Media" with a lower-case "social" preceding it, the parenthetical definition supplied to respondents lists television, magazines, the internet, movies, billboards and advertisements. Responses to items 19 to 22 are therefore treated throughout this paper as referring to media in that broad sense and not to social media platforms.

## Appendix B

### SATAQ-4 Instrument and Scoring Information

The SATAQ-4 was developed and validated by Schaefer et al. (2015) and published in *Psychological Assessment*, 27(1), 54–67. Exploratory and confirmatory factor analyses in a sample of 859 women produced a 22-item scale with five factors, confirmed in three independent United States samples, an international female sample drawn from Italy, England and Australia, and a United States male sample. The 22-item, five-factor structure reported in that publication is the structure used here, verified against the source before any scoring was carried out.

**Table B1**

*SATAQ-4 Subscales and Item Assignment*

| Subscale                           | Items          | k |
|------------------------------------|----------------|---|
| Internalization: Thin/Low Body Fat | 3, 4, 5, 8, 9  | 5 |
| Internalization: Muscular/Athletic | 1, 2, 6, 7, 10 | 5 |
| Pressures: Family                  | 11, 12, 13, 14 | 4 |
| Pressures: Peers                   | 15, 16, 17, 18 | 4 |
| Pressures: Media                   | 19, 20, 21, 22 | 4 |

*Note.* Assignment as specified by Schaefer et al. (2015). Items 1 to 10 do not form a single subscale despite appearing consecutively in the questionnaire.

### Scoring and Interpretation

Responses are coded 1 (Strongly disagree) to 5 (Strongly agree). No item requires reverse scoring: all 22 items are keyed so that higher agreement indicates greater internalisation or greater perceived pressure, and every item was inspected for reverse wording before scoring. Each subscale score is the mean of its constituent items, so subscale scores range from 1.00 to 5.00 and are comparable across subscales of different length. One deviation from the original administration should be noted: Schaefer et al. (2015) used anchors of 1 (definitely disagree) and 5 (definitely agree), whereas this administration used Strongly disagree through Strongly agree with an explicitly neutral midpoint. The number of options, the ordinal spacing and the scoring direction are unchanged.

The SATAQ-4 measures internalisation of appearance ideals and perceived appearance-related pressure from three named sources. It does not measure body satisfaction, appearance evaluation, body esteem, body surveillance, eating behaviour, or social media use. Schaefer et al. (2015) reported convergent validity between SATAQ-4 subscales and separate measures of body image, eating disturbance and self-esteem, which establishes that the constructs are related, not that the SATAQ-4 substitutes for those measures.

## Appendix C

### Consent and Participant Information

Participation was voluntary. The questionnaire was distributed as an online form and submission was taken as indication of consent; respondents were free to close the form at any point before submitting. No identifying information was requested or recorded — the exported dataset contains 22 item responses per respondent and an

automatically generated submission timestamp, with no names, email addresses, contact details, IP addresses or demographic identifiers — so individual respondents cannot be identified. Responses were analysed in aggregate, no individual response is reported in this paper, and all figures presented are group-level statistics computed across the full sample of 101 respondents.

All items concerned attitudes toward appearance and perceptions of pressure from family, peers and media. No item asked respondents to disclose weight, height, body measurements, eating behaviour, exercise behaviour or clinical history, and no item required a response about a specific named individual. Questions of this kind may be uncomfortable for some respondents, and the risk was minimised by keeping items to the standard validated wording, requiring no disclosure of personal physical characteristics, and allowing withdrawal at any point before submission.

## Appendix D Statistical Output

All analyses were conducted on the raw exported responses (N = 101, no missing values) using Python 3 with the pandas, NumPy and SciPy libraries.

**Table D1**

*Item Analysis and Subscale Normality Checks (N = 101)*

| Subscale ( $\alpha$ )                    | Corrected item-total r | $\alpha$ if item deleted | Shapiro-Wilk W | p      |
|------------------------------------------|------------------------|--------------------------|----------------|--------|
| Internalization: Thin/Low Body Fat (.79) | .49 to .70             | .70 to .78               | .968           | .015   |
| Internalization: Muscular/Athletic (.85) | .48 to .72             | .79 to .86               | .981           | .144   |
| Pressures: Family (.82)                  | .60 to .67             | .76 to .79               | .980           | .139   |
| Pressures: Peers (.89)                   | .68 to .80             | .85 to .89               | .969           | .018   |
| Pressures: Media (.93)                   | .80 to .87             | .90 to .92               | .927           | < .001 |
| SATAQ-4 total (.92)                      | —                      | —                        | .967           | .012   |

*Note.* All 22 corrected item-total correlations exceed .30 and no item deletion would raise its subscale alpha by more than .01, so all items were retained. Three subscales departed significantly from normality; skewness and kurtosis remained within conventional limits throughout (see Table 3), and non-parametric equivalents were computed alongside every parametric test and agreed with the parametric results in all cases.

**Table D2**

*Mean Comparisons and Regression Diagnostics (N = 101)*

| Test                                 | Result                                                                                                                                                                                                      |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| One-sample t vs. midpoint 3.00       | Thin/Low Body Fat $t(100) = 1.98, p = .050, d = 0.20$ ; Muscular/Athletic $t = 2.54, p = .013, d = 0.25$ ; Family $t = 1.46, p = .147, d = 0.15$ ; Peers $t = -0.22, p = .827$ ; Media $t = 0.61, p = .545$ |
| Thin vs. Muscular internalisation    | $t(100) = -0.72, p = .474, d^z = -0.07$ ; Wilcoxon $p = .407$                                                                                                                                               |
| Friedman test across three pressures | $\chi^2(2) = 1.73, p = .421$                                                                                                                                                                                |
| Pairwise pressure comparisons        | Family vs. Peers $t(100) = 1.85, p = .067, d^z = 0.18$ ; Family vs. Media $p = .570$ ; Peers vs. Media $p = .377$ (Bonferroni .0167)                                                                        |
| Durbin-Watson                        | Model 1 = 1.61; Model 2 = 2.03                                                                                                                                                                              |
| Shapiro-Wilk on residuals            | Model 1 $W = .992, p = .823$ ; Model 2 $W = .986, p = .344$                                                                                                                                                 |
| Breusch-Pagan                        | Model 1 $\chi^2(3) = 0.65, p = .884$ ; Model 2 $\chi^2(3) = 1.30, p = .729$                                                                                                                                 |
| Variance inflation factors           | Family 1.71; Peers 1.94; Media 1.46 (identical across both models)                                                                                                                                          |
| Effect sizes                         | Model 1 $R^2 = .313, f^2 = 0.46$ (large); Model 2 $R^2 = .213, f^2 = 0.27$ (medium-large)                                                                                                                   |

*Note.* All regression assumptions were met for both models; effect size benchmarks follow Cohen (1988).

## Analyses Not Conducted, and Why

Independent-samples t tests and between-groups ANOVA were not conducted, because both require a grouping variable and the questionnaire collected none. Confirmatory factor analysis was not conducted, because 101 cases provide an insufficient case-to-parameter ratio for a 22-item, five-factor model; the structure was therefore adopted from Schaefer et al. (2015). Analyses involving social media use were not conducted, because social media use was not measured; analyses involving body image or body satisfaction were not conducted, because no validated body image measure was administered; and mediation analysis was not conducted, because appearance comparison was not measured and no downstream outcome was available.