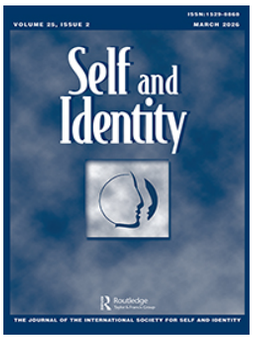

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Momentary fluctuations in body image dissatisfaction among women: The role of self-concept clarity

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ABSTRACT

Low self-concept clarity is linked to a greater tendency to engage in appearance-based comparisons and a greater degree of internalization of societal appearance ideals, both of which contribute to body dissatisfaction. This study extends previous trait-level research by examining whether momentary fluctuations in self-concept clarity also predict these outcomes. A sample of 203 women completed trait measures of self-concept clarity, appearance comparisons, internalization of appearance ideals, and body dissatisfaction, and also participated in a five-day ecological momentary assessment (EMA) protocol, responding to surveys assessing these same constructs five times per day. Lower trait self-concept clarity was associated with more frequent appearance comparisons and greater internalization across the EMA period. Furthermore, lower momentary self-concept clarity was associated with a greater likelihood of engaging in (upward) appearance comparisons and internalization, both concurrently and at a subsequent time point. Upward appearance comparisons and momentary internalization were linked to momentary body dissatisfaction, lower positive affect, and higher negative affect. However, self-concept clarity (trait or momentary) did not moderate the impact of appearance comparisons or internalization on body dissatisfaction or affect. These findings suggest that low self-concept clarity increases vulnerability to sociocultural appearance processes, thereby increasing risk for body dissatisfaction.

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self-concept clarity; appearance comparisons; internalization; body dissatisfaction; ecological momentary assessment

Introduction

Body image is a multidimensional construct that captures an individual's beliefs, thoughts, and emotions related to their own physical appearance (Voelker et al., 2015). For many people, especially women in Western cultures, evaluating oneself on these physical attributes can often be a negative experience (MacNeill et al., 2017; Quittkat et al., 2019). For example, one study found that 87% of women expressed some level of dissatisfaction with their body weight and shape, with nearly 40%

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reporting moderate to severe dissatisfaction (Mond et al., 2013). Similarly, almost half of Australian girls aged 15–19 expressed being very or extremely concerned about their body image (Tiller et al., 2020). Body dissatisfaction is associated with a range of negative outcomes, including low self-esteem, reduced quality of life, emotional distress, depression, and increased vulnerability to clinical eating disorders (Laporta-Herrero et al., 2018; Mond et al., 2013; Ohring et al., 2002; Rohde et al., 2015; Tylka, 2004). Given its high prevalence and serious psychological consequences, identifying the risk factors that contribute to body dissatisfaction is crucial for informing prevention and intervention efforts.

Existing literature consistently highlights sociocultural processes, such as appearance-based social comparisons and internalization of societal appearance ideals, as key contributors to body image concerns (Keery et al., 2004; Rodgers et al., 2015). Appearance-based comparisons occur when people compare their appearance to the appearance of others. Comparisons to someone perceived as more attractive, known as upward comparisons, are strongly linked to increased body dissatisfaction (e.g., Rancourt et al., 2016; Scully et al., 2023). In contrast, lateral comparisons (comparisons to someone of similar attractiveness) and downward comparisons (comparisons to someone less attractive) have been studied less frequently, and their effects on body image are less consistent (Gerber et al., 2018; Ho et al., 2016; Myers et al., 2012; Wills, 1981).

Internalization of societal appearance ideals refers to the extent to which individuals adopt cultural standards of attractiveness as personally meaningful beliefs and goals (Thompson & Stice, 2001). Traditionally, research has focused on internalization of the "thin ideal," characterized by a slender physique with minimal body fat (Paterna et al., 2021), and has consistently linked thin-ideal internalization to heightened body dissatisfaction (Blowers et al., 2003; Homan, 2010). More recently, a new emerging ideal has gained attention, specifically a "fit ideal" that emphasizes both leanness and muscle tone. As with the thin ideal, internalization of the fit ideal has been associated with adverse outcomes, including increased body dissatisfaction and engagement in maladaptive behaviors (e.g., compulsive exercise, restrictive dieting; Donovan & Uhlmann, 2022; Donovan et al., 2020).

Sociocultural models have been instrumental in identifying the mechanisms underlying body dissatisfaction, but they do not fully explain why some individuals are more vulnerable to these influences than are others. That is, why do some people engage in appearance comparisons more frequently, and why do others internalize societal appearance ideals more strongly? One individual difference for which there is increasing evidence as a risk factor in this context is self-concept clarity (SCC). SCC refers to the extent to which an individual's sense of self is clearly and confidently defined, internally consistent, and stable over time (Campbell et al., 1996). Individuals with low SCC lack a clear and well-defined sense of self, and are more likely to rely on external sources to help define their identity and understand who they are (Campbell, 1990). In the context of body image, this heightened dependence on external cues may lead to increased vulnerability to these sociocultural processes. Empirical evidence supports this idea, with several studies demonstrating that lower SCC is associated with a higher tendency to engage in appearance comparisons and a greater degree of internalization of societal appearance ideals (Vartanian & Dey, 2013; Vartanian et al., 2023;

Vartanian et al., 2018). Moreover, longitudinal research with adolescent girls has shown that lower SCC at baseline predicted a greater tendency to engage in appearance comparisons and a higher level of internalization over a three-month period (Vartanian & Nicholls, 2024).

Most of the existing research linking self-concept clarity to sociocultural appearance processes has relied on self-report measures that capture individuals' general tendencies (e.g., the degree to which they generally compare themselves to others). Although informative, these designs are inherently limited by their dependence on participants' ability to accurately recall and summarize past experiences. They also fail to account for individual differences in how people respond to stimuli within their natural environments in real time. For instance, an experimental study found that exposure to idealized images in a controlled setting led to body dissatisfaction, with the effects varying based on participants' level of SCC (Carter & Vartanian, 2022). Specifically, individuals with lower SCC were more likely to engage in appearance-based comparisons and reported greater body dissatisfaction following exposure to idealized imagery. Participants in that study viewed a standard set of images that reflected the thin ideal (i.e., pictures of thin, idealized models) in a controlled laboratory setting, thus reducing the ecological validity of the findings. Furthermore, SCC was measured at the trait level, overlooking potential momentary fluctuations in self-concept clarity that could be associated with sociocultural processes and body dissatisfaction.

An approach that could be useful in overcoming some of the limitations of previous research is Ecological Momentary Assessment (EMA). In EMA studies, participants are prompted to complete brief surveys multiple times per day over several days, offering researchers the opportunity to study the psychological phenomena of interest within real-world settings and over time (Arigo et al., 2020; Shiffman et al., 2008). Compared to retrospective self-report studies, EMA has the advantage of capturing participants' experiences in the moment or shortly after they occur, rather than relying on memory recall spanning weeks, months, or longer (Smyth & Stone, 2003). In the context of body image, research using EMA has shown that upward appearance comparisons in daily life were linked to higher state body dissatisfaction and negative affect (e.g., Fardouly et al., 2017), and that momentary thin-ideal internalization was associated with higher state body dissatisfaction (Fitzsimmons-Craft et al., 2016).

One recent EMA study found that trait self-concept clarity predicted the frequency of (upward) appearance comparisons in daily life (Vartanian et al., 2025). Although SCC is typically conceptualized as a trait variable, there is evidence of day-to-day and even momentary variations in individuals' SCC, and this variability is associated with relevant outcomes. For example, Nezlek and Plesko (2001) found that daily fluctuations in SCC were associated with changes in affect (both negative and positive) and self-esteem. Similarly, in a clinical sample of individuals with borderline personality disorder, Scala et al. (2018) found that at moments when SCC was lower, negative affect more strongly predicted self-injurious urges. These findings suggest that daily or momentary shifts in SCC may also influence sociocultural appearance processes in everyday life. Therefore, examining both trait and state SCC in relation to momentary sociocultural processes could provide deeper insight into individual differences in body dissatisfaction.

The current study

This study examined the potential influence of self-concept clarity on sociocultural processes using an EMA design to address identified research gaps. Participants completed baseline trait measures and then received five signals daily for a period of five days, completing measures of SCC, appearance comparisons, internalization, and body dissatisfaction.

Based on prior research (e.g., Vartanian et al., 2018, 2025), we hypothesized that lower trait SCC would be associated with greater trait appearance comparisons and internalization tendencies, as well as more frequent comparisons and higher internalization of societal ideals across the EMA period (H1). Additionally, drawing on evidence demonstrating fluctuations in SCC at the state level (e.g., Nezlek & Plesko, 2001; Scala et al., 2018), we predicted that lower momentary SCC would be associated with an increased likelihood of engaging in appearance comparisons and a greater degree of internalization (H2). Finally, although most sociocultural models of body image emphasize mediation pathways (e.g., Shroff & Thompson, 2006; van den Berg et al., 2002), recent work has begun to examine whether individual difference such as SCC may *moderate* the impact of sociocultural processes on body image outcomes. One recent study (Vartanian et al., 2025) found no moderation effect of trait SCC on the impact of making appearance comparisons, but they only examined SCC at a trait level. Therefore, we explored the possibility that SCC (trait or momentary) might moderate the strength of the relationship between sociocultural processes and body dissatisfaction outcomes (RQ1).

Method

Participants

Participants were recruited from either a first-year psychology course at an Australian university or from a database of individuals who had previously expressed interest in participating in research in our lab. Students in the first-year psychology course ($n = 214$) received course credit for their participation, and participants recruited from the database ($n = 58$) earned up to AUD $35 for completing all components of the study. University students are an especially relevant population for examining sociocultural appearance processes, given that emerging adulthood involves multiple transitions (e.g., moving from school to university and from living with family to living independently) that may contribute to lower SCC as individuals adjust and clarify their roles across these transitions (Lodi-Smith & Crocetti, 2017). Indeed, lower SCC during this period has been associated with a range of detrimental outcomes, including lower relationship satisfaction, loneliness, depression, and anxiety (Hertel et al., 2024; Weber et al., 2023).

We deliberately restricted the sample to women due to well-documented gender differences in body image concerns, with research indicating that women consistently report higher levels of body dissatisfaction and are disproportionately subjected to sociocultural beauty standards that are often unattainable and potentially detrimental to their wellbeing (Dittmar, 2005). Although growing evidence has also highlighted the relevance of body image concerns among men and gender-diverse individuals

(e.g., Maher et al., 2021; Wehrmann et al., 2025), women remain the most affected and extensively studied group. Considering that this study addressed a relatively novel question, focusing on a high-risk population provides a strong foundation for future research involving more diverse samples. Additionally, eligibility was further limited to individuals with a smartphone and data plan, given that the study utilized an EMA design requiring participants to complete multiple surveys on their smartphones throughout the day.

Of the initial 272 participants who completed the baseline measures, 17 could not take part in the EMA phase due to technical issues (e.g., smartphone compatibility), leaving 255 participants who completed the EMA phase of the study. There is no consensus on the minimum level of compliance for data inclusion in EMA studies. In this study, we adopted a cutoff of at least 50% of EMA surveys (13 out of 25 signals) completed. This threshold meant that participants were completing more than half of their surveys, and also resulted in a mean compliance rate of close to 80% (which is consistent with the average compliance rate of other published studies in this field; e.g., Heron & Smyth, 2013; LePage & Crowther, 2010; Ridolfi et al., 2011). Of the 255 participants who enrolled in the EMA portion of the study, 203 completed at least 50% of their surveys and were thus included in the analyses for this study.[1]

The final sample had a mean age of 19.3 years ($SD = 3.50$), and a mean Body Mass Index (BMI; kg/m^2) of 22.0 ($SD = 3.90$). The majority of participants identified as Asian ($n = 116$; 57.1%), followed by White ($n = 47$; 23.2%), "Other" ($n = 25$; 12.3%), Middle Eastern ($n = 14$; 6.9%), and Black ($n = 1$; 0.5%). Participants completed a total of 4009 surveys, with an average of 19.75 ($SD = 3.17$) out of a maximum of 25. The study was not pre-registered. All procedures were approved by the UNSW Human Research Ethics Advisory Panel C, Behavioural Sciences (File No. 3735).

Procedure

Baseline session

Participants were informed that the study aimed to examine people's views and feelings about themselves and their looks. At an initial session (with up to four people per group), participants were seated at individual computers where they provided informed consent, demographic information, and completed trait-level questionnaires. Next, the experimenter gave participants detailed instructions on how to download and use the SEMA3 application (Smartphone Ecological Momentary Assessment, version 3; O'Brien et al., 2024) that they would be using to complete the EMA surveys.

Five-day ecological momentary assessment

Beginning on the morning after the initial session, participants were prompted five times per day over five consecutive days (including at least one weekend day) to complete surveys on their smartphone via the SEMA3 app. Signals were scheduled at semi-random intervals, within 2- to 3-hour blocks and at a random time within each block, from 9 am to 9pm. After receiving a signal, participants had 30 minutes to complete the survey, with reminder alerts sent at 15 minutes and again 2–3 minutes before the survey expired. Any survey not completed within the 30-minute window was recorded as a missed survey.

After the five-day period, participants received the debriefing information and compensation, which was pro-rated based on the number of surveys completed. To encourage high compliance and to minimize attrition, participants who completed at least 80% of the EMA surveys were entered into a draw to win one of four $50 gift vouchers.

Materials

Trait-level measures

Participants first completed a measure of self-concept clarity, and then completed the measures of sociocultural appearance processes (thin-ideal internalization, fit-ideal internalization, and appearance comparisons) and body dissatisfaction in random order. After completing these questionnaires, participants provided demographic information.

Self-concept clarity. The Self-Concept Clarity Scale (SCCS; Campbell et al., 1996; $\alpha = .85$) is a 12-item measure that assesses the extent to which individuals have a clear, coherent, and stable sense of who they are. Participants responded to each statement (e.g., "In general, I have a clear sense of who I am and what I am") on a 7-point Likert scale (1 = *Strongly disagree*, 7 = *Strongly agree*). After reverse-coding relevant items, the scores were averaged, with higher scores indicating greater SCC. The SCCS has demonstrated good criterion validity in university samples (Campbell et al., 1996) and internal consistency among female undergraduates (Vartanian & Dey, 2013).

Thin-ideal internalisation. The Thin/Low Body Fat subscale of the Sociocultural Attitudes Towards Appearance Questionnaire-4-Revised (SATAQ-4 R; Schaefer et al., 2017; $\alpha = .83$) is a 4-item scale that measures the degree to which individuals reported a desire for a thin physique. Participants rated their agreement with each statement (e.g., "I want my body to look very thin") on a 5-point Likert scale (1 = *Strongly disagree*, 5 = *Strongly agree*). Scores were averaged, with higher scores indicating greater internalization of societal appearance ideals. The SATAQ-4 R has shown good reliability and construct validity in university women (Schaefer et al., 2017).

Fit-ideal internalisation. The Idealisation subscale of the Fit Ideal Internalisation Test (FIIT; Uhlmann et al., 2020; $\alpha = .92$) is an 8-item scale that assesses the extent to which individuals internalise a body type that is simultaneously lean and toned. Participants rated each statement (e.g., "I am preoccupied with the idea of having a body that looks both lean and toned") on a 5-point Likert scale (1 = *Strongly disagree*, 5 = *Strongly agree*), with higher mean scores reflecting a greater desire to achieve a fit-ideal appearance. The FIIT has demonstrated good test-retest reliability, and good convergent, discriminant, and incremental validity (Uhlmann et al., 2020).

Appearance comparisons. The 11-item Physical Appearance Comparison Scale-Revised (PACS-R; Schaefer & Thompson, 2014; $\alpha = .96$) was used to measure participants' tendency to engage in appearance-based social comparisons. Participants rated each item (e.g., "When I'm out in public, I compare my physical appearance to the appearance of others") on a 5-point scale (0 = *Never*, 4 = *Always*), with higher mean scores indicating

a greater tendency to make appearance comparisons. The PACS-R has demonstrated good reliability and validity in samples of university women (Schaefer & Thompson, 2014).

Body dissatisfaction. The Body Dissatisfaction subscale of the Eating Disorder Inventory (EDI; Garner et al., 1983; $\alpha = .88$) contains 9 items that evaluate individuals' dissatisfaction with their overall body and specific body parts. Participants rated each item (e.g., "I think that my thighs are too large") on a 6-point scale (1 = *Never*; 6 = *Always*). After reverse-coding relevant items, higher mean scores indicated greater body dissatisfaction. The EDI has shown high internal consistency among female university students (Garner et al., 1983).

Demographics. Participants provided information on age, ethnicity, height and weight. Self-reported height and weight were used to calculate participants' BMI.

Momentary-Level (EMA) measures

The momentary-level measures were assessed in the order presented below.

Appearance comparisons. At the start of each survey, participants indicated whether or not they had engaged in an appearance-based social comparison since the last time they completed a survey ("yes" = 1, "no" = 0). If they had not made a comparison, then they proceeded directly to the measures described below. If they had made a comparison, they were asked to think about the most recent comparison they made and to indicate the direction of the comparison: "How did you think you looked compared to the other person?" (*much worse, worse, the same, better, much better*). Consistent with previous research (e.g., Fardouly et al., 2017; Fuller-Tyszkiewicz et al., 2019), responses of *much worse* or *worse* were coded as upward comparisons (UCs), responses of *the same* were coded as lateral comparisons (LCs), and responses of *better* or *much better* were coded as downward comparisons (DCs).

Thin-ideal internalisation. Building on Fitzsimmons-Craft et al.'s (2016) initial work in measuring momentary thin-ideal internalization, two new items (modified from the original SATAQ-4 R) were used to assess thin-ideal internalization at the momentary level: "Right now, I wish my body looked very thin" and "Right now, I wish my body had very little body fat." Participants rated these items on a 5-point Likert scale (1 = *Strongly disagree*, 5 = *Strongly agree*). Scores were averaged, with higher scores indicating greater momentary thin-ideal internalization ($\alpha = .85$).

Fit-ideal internalisation. Fit-ideal internalization has not been examined at the momentary level or within an EMA context. Therefore, for this study, a single item from the original FIIT was modified to assess momentary fit-ideal internalization ("Right now, I wish my body looked both lean and toned"). Participants rated this item on a scale from 1 (*Strongly disagree*) to 5 (*Strongly agree*).

Body dissatisfaction. Participants rated their (dis)satisfaction with their body size, shape, and overall physical appearance at the moment of completing the survey. Both single-

item and multi-item approaches have been used in prior EMA studies of body image (e.g., Tan et al., 2019; Vartanian et al., 2025). In the current study, participants responded to two items: "Regarding my body size and shape, right now I feel . . . " and "Regarding my physical appearance, right now I feel . . . ," using a 5-point scale (1 = *Extremely dissatisfied*, 5 = *Extremely satisfied*). Scores were reverse-coded and averaged, with greater mean scores indicating greater momentary body dissatisfaction $(\alpha = .87)$.

Affect. Participants reported their current affect on a 5-point Likert scale (1 = *Strongly disagree*, 5 = *Strongly agree*) regarding three positive emotions (happy, inspired, proud) and three negative emotions (discouraged, upset, ashamed). These emotions were selected based on previous research examining emotions in a similar context (e.g., Fardouly et al., 2017; Vartanian et al., 2025). The number of items was reduced from five to three for each valence to minimize participant burden. Although some previous naturalistic work in a similar area has investigated participants' affect subsequent to a specific event (e.g., how they felt after experiencing a stigmatizing event, how they felt after making a social comparison; Fardouly et al., 2017; Vartanian et al., 2014), the current study assessed participants' affect at the precise moment they were completing the survey (e.g., "Right now, I feel proud"). This momentary phrasing was intended to capture real-time emotional states, rather than relying on retrospective recalls of how participants' felt after an event. Items for positive $(\alpha = .79)$ and negative $(\alpha = .83)$ emotions were averaged separately to create a mean positive and a mean negative affect score for each participant.

Self-concept clarity. Momentary SCC was measured using a single item from the SCCS (Campbell et al., 1996), rated on a scale from 1 (*Strongly disagree*) to 5 (*Strongly agree*). The item "Right now, I have a clear sense of who I am and what I am" captures the core aspect of SCC, as defined by Campbell et al. (1996), and has been used in similar studies (Scala et al., 2018; Schwartz et al., 2011). Higher scores indicate greater momentary SCC.

Statistical analyses

All data analyses were conducted using jamovi (version 2.3; The jamovi project, 2023). The data were normally distributed, with no missing data on trait-level measures. For EMA surveys with partially missing data, jamovi excluded these cases through casewise deletion.

Correlational analyses were conducted to test H1. First, to examine associations among trait variables, Pearson correlation analyses were conducted to determine whether the pattern of correlations in this sample aligned with previous research, and specifically whether trait SCC was negative associated with trait-level appearance comparisons and internalization. Second, Spearman's Rho correlations were used to examine whether trait SCC would be negatively correlated with the total number of appearance comparisons, as well as the number of upward (UCs), lateral (LCs), and downward comparisons (DCs) reported throughout the five-day EMA period. With regards to internalization, participants' thin-ideal and fit-ideal internalization scores were averaged across all EMA surveys to create between-person aggregate scores, and Pearson correlations were used to test their association with trait SCC.

H2 was tested using data from the EMA phase, which is nested in structure due to repeated measures. To account for this non-independence inherent in the structure of data, multilevel modeling (Bryk & Raudenbush, 1992) was conducted using the GAMLj linear models module in jamovi (Gallucci, 2019; The jamovi project, 2023). Mixed Models were used for continuous dependent variables, and Generalised Mixed Models were used for dichotomous dependent variables. These models all had random intercepts and fixed slopes, and all continuous variables were grand-mean centered (interaction effects involving these variables were computed using these centered values).

The analyses testing whether momentary SCC predicts the occurrence of a comparison and the degree of internalization tendency were conducted in two ways: concurrent analyses assessed whether momentary SCC predicted if a comparison was reported since the last EMA survey and the degree of momentary internalization, whereas prospective analyses assessed whether momentary SCC at one time point (T1) predicted a reported comparison and the degree of internalization at the next time point (T2). To test the prospective association between SCC at T1 and comparison/internalization at T2, a lagged SCC variable was created to reflect SCC responses at time point *t–1*. Responses from the final survey of each day were excluded from the lagged SCC variable to account for the overnight time gap, because this lag would represent an interval exceeding 12 hours, which was substantially longer than the 2–3-hour interval between surveys within a day. The inclusion of such inconsistent time gaps could introduce noise and affect the interpretability of the lagged effects. For appearance comparisons, in addition to the yes (1) or no (0) variable, analyses were also conducted separately for UCs, LCs, and DCs against no comparison (NC) to create four total dummy appearance variables (i.e., Comparison vs. NC; UC vs. NC; LC vs. NC; DC vs. NC). Generalised Mixed Models were fitted for these analyses, with momentary SCC as the predictor and the respective comparison variables as the outcome. For the internalization analyses, Mixed Models were used, with momentary SCC as the predictor and the thin-ideal or fit-ideal internalization as the outcome.

The final set of analyses tested whether trait SCC or momentary SCC (separately) moderated the impact of appearance comparisons and internalization on body dissatisfaction (BD) and affect (RQ1). Mixed models were first used to assess the effect of appearance comparisons (yes vs. no) on momentary BD and affect separately. These analyses were repeated for the different comparison directions (UC vs. NC; LC vs. NC; DC vs. NC). The same approach was applied to test the associations between internalization and the outcomes, with thin-ideal and fit-ideal internalization (separately) as predictors. To examine whether trait SCC and momentary SCC (separately) moderated these sociocultural processes, SCC was included as a moderator in these models.

To account for the multiple analyses performed, significance levels were adjusted to maintain a 5% false discovery rate, following the Benjamini-Hochberg procedure (Benjamini & Hochberg, 1995). Using this method, p-values $\leq .019$ were deemed statistically significant.

Results

The bivariate correlations among trait-level variables are presented in Table 1. Consistent with H1, SCC was negatively correlated with all measures of sociocultural

Table 1. Descriptive statistics and bivariate correlations for trait-level measures.

	M (SD)	1	2	3	4
1. Self-concept clarity	3.82 (1.07)	—			
2. Thin-ideal internalisation	3.33 (1.09)	−.32	—		
3. Fit-ideal internalisation	3.29 (1.12)	−.44	.75	—	
4. Appearance comparisons	2.89 (1.20)	−.46	.64	.72	—
5. Body dissatisfaction	3.35 (1.04)	−.47	.54	.58	.61

All correlations are significant at $p < .001$.

processes (i.e., thin-ideal internalization, fit-ideal internalization, appearance comparisons), as well as with body dissatisfaction. Additionally, thin-ideal internalization, fit-ideal internalization, and appearance comparisons were each positively correlated with body dissatisfaction.

Trait SCC and Momentary sociocultural processes

Of the 4009 surveys completed, there were 814 comparisons reported (20.3% of surveys) across the five-day EMA period ($M = 4.01$, $SD = 3.67$, range 0–22, per participant). Among the reported comparisons that were coded into directions ($n = 811$; 3 were missing due to non-response on the follow-up question regarding direction of comparison), UCs were the most common with 542 occasions reported (67% of all comparisons; $M = 2.67$, $SD = 2.88$, range 0–16), 146 were LCs (18%; $M = 0.72$, $SD = 1.22$, range 0–8), and 123 were DCs (15%; $M = 0.61$, $SD = 1.21$, range 0–8).

Consistent with H1, trait SCC was negatively correlated with the total number of comparisons reported (regardless of the direction) during the EMA period, $\rho = -.24, p < .001$. When looking at each direction of comparison separately, trait SCC demonstrated a significant negative correlation with the number of UCs reported, $\rho = -.32, p < .001$. However, there were no significant associations between trait SCC and the number of LCs reported, $\rho = -.01, p = .841$, or the number of DCs reported, $\rho = .004, p = .953$.

Regarding the measures of internalization, trait SCC was negatively correlated with the between-person aggregate scores across the EMA period for thin-ideal internalization, $r = -.29, p < .001$, and fit-ideal internalisation, $r = -.23, p < .001$.

Momentary SCC and Sociocultural processes

The Intraclass Correlation Coefficient (ICC = .68) indicated that most of the variance in momentary SCC occurred between individuals (i.e., 68% of the variance was attributable to differences between individuals, and the remaining 32% reflected variation within individuals).

Concurrent analyses

As shown in Table 2, momentary SCC significantly predicted whether a comparison was reported or not in the same survey, with lower momentary SCC associated with a greater likelihood of reporting a comparison. With respect to the different directions of comparisons, lower momentary SCC was associated with a greater likelihood

of reporting an UC. However, the associations between momentary SCC and the likelihood of reporting an LC or a DC were not significant.

Regarding the concurrent relationship between SCC and internalization of sociocultural ideals, lower SCC was associated with higher levels of thin-ideal internalization. However, the association between SCC and fit-ideal internalization was not significant at the Benjamini-Hochberg-adjusted threshold (see Table 2).

Lagged analyses

For the lagged analyses (see Table 3 for full results), SCC at T1 significantly predicted the likelihood of reporting a comparison at T2, with lower T1 SCC being associated with an increased likelihood of a subsequent comparison. This significant relationship was also observed for the likelihood of engaging in an UC at T2. However, no significant associations were observed for LCs or for DCs, replicating the findings at the momentary level.

Regarding the prospective relationship between SCC and internalization, T1 SCC was prospectively associated with both T2 thin-ideal internalization and T2 fit-ideal internalization. Specifically, lower T1 SCC predicted greater internalization of both ideals at T2. Overall, findings from both concurrent and lagged analyses supported H2.

Table 2. Concurrent associations between momentary self-concept clarity and momentary sociocultural processes.

Outcome variable	*b*	*SE*	*z/t*	*OR*	95% CI	*p*
Appearance comparisons						
Compared vs. NC	−0.24	0.06	−4.17	0.79	0.70, 0.88	**<.001**
UC vs. NC	−0.42	0.07	−6.21	0.65	0.57, 0.75	**<.001**
LC vs. NC	0.03	0.12	0.24	1.03	0.82, 1.30	.810
DC vs. NC	0.22	0.12	1.79	1.25	0.98, 1.59	.074
Internalisation						
TII	−0.12	0.02	−7.43	–	− 0.15, − 0.09	**<.001**
FII	−0.04	0.02	−2.29	–	− 0.08, − 0.01	.022

z-scores are reported for appearance comparison outcomes (dichotomous); *t*-scores are reported for internalisation outcomes (continuous). NC = no comparison; UC = upward comparison; LC = lateral comparison; DC = downward comparison; TII = thin-ideal internalisation; FII = fit-ideal internalisation. Raw *p*-values are shown, with statistically significant values (determined using the Benjamini-Hochberg procedure) highlighted in bold.

Table 3. Lagged associations between momentary self-concept clarity at T1 and momentary sociocultural processes at T2.

Outcome variable	*b*	*SE*	*z/t*	*OR*	95% CI	*p*
Appearance comparisons						
Compared vs. NC	−0.20	0.07	−2.82	0.82	0.71, 0.94	**.005**
UC vs. NC	−0.30	0.09	−3.58	0.74	0.63, 0.87	**<.001**
LC vs. NC	−0.03	0.15	−0.18	0.97	0.72, 1.32	.856
DC vs. NC	−0.05	0.15	−0.33	0.95	0.71, 1.28	.739
Internalisation						
TII	−0.10	0.02	−4.76	–	− 0.14, − 0.06	**<.001**
FII	−0.08	0.02	−3.37	–	− 0.12, − 0.03	**<.001**

z-scores are reported for appearance comparison outcomes (dichotomous); *t*-scores are reported for internalization outcomes (continuous). NC = no comparison; UC = upward comparison; LC = lateral comparison; DC = downward comparison; TII = thin-ideal internalization; FII = fit-ideal internalization. Raw *p*-values are shown, with statistically significant values (determined using the Benjamini-Hochberg procedure) highlighted in bold.

Table 4. Momentary sociocultural processes as predictors of momentary body dissatisfaction.

Predictors	*b*	*SE*	*z/t*	95% CI	*p*
Appearance comparisons					
UC vs. NC	0.43	0.03	13.63	0.37, 0.49	**<.001**
LC vs. NC	−0.02	0.06	−0.32	−0.12, 0.09	.750
DC vs. NC	−0.16	0.06	−2.77	−0.28, −0.05	**.006**
Internalisation					
TII	0.26	0.02	17.16	0.23, 0.29	**<.001**
FII	0.11	0.01	7.99	0.08, 0.14	**<.001**

z-scores are reported for appearance comparison outcomes (dichotomous); *t*-scores are reported for internalisation outcomes (continuous). NC = no comparison; UC = upward comparison; LC = lateral comparison; DC = downward comparison; TII = thin-ideal internalisation; FII = fit-ideal internalisation. Raw *p*-values are shown, with statistically significant values (determined using the Benjamini-Hochberg procedure) highlighted in bold.

Main effects of sociocultural processes

Body dissatisfaction

Upward comparisons (compared to no comparison) were associated with greater body dissatisfaction, whereas downward comparisons (compared to no comparison) were associated with lower body dissatisfaction. The relationship between lateral comparisons and body dissatisfaction was not significant. Greater momentary thin-ideal internalization and greater momentary fit-ideal internalization were significantly associated with greater momentary body dissatisfaction. See Table 4 for the complete details of these main effects.

Positive affect

Table 5 presents the full results for the main effects of sociocultural predictors on momentary positive affect. Upward comparisons were associated with lower positive affect, whereas downward comparisons were associated with higher positive affect. As with body dissatisfaction, lateral comparisons were not connected to positive affect. Regarding internalizations, both greater momentary thin-ideal internalization and greater momentary fit-ideal internalization were significantly associated with lower positive affect.

Negative affect

Upward comparisons were linked to greater negative affect, whereas downward comparisons were associated to lower negative affect. Consistent with the pattern observed for body dissatisfaction and positive affect, the association between lateral comparisons and negative affect was not significant. For internalizations, both greater momentary thin-

Table 5. Momentary sociocultural processes as predictors of momentary positive affect.

Predictors	*b*	*SE*	*z/t*	95% CI	*p*
Appearance comparisons					
UC vs. NC	−0.21	0.03	−6.95	−0.27, −0.15	**<.001**
LC vs. NC	0.05	0.05	0.91	−0.06, 0.15	.364
DC vs. NC	0.18	0.06	3.21	0.07, 0.29	**.001**
Internalisation					
TII	−0.11	0.01	−7.89	−0.14, −0.08	**<.001**
FII	−0.03	0.01	−2.60	−0.06, −0.01	**.009**

z-scores are reported for appearance comparison outcomes (dichotomous); *t*-scores are reported for internalisation outcomes (continuous). NC = no comparison; UC = upward comparison; LC = lateral comparison; DC = downward comparison; TII = thin-ideal internalisation; FII = fit-ideal internalisation. Raw *p*-values are shown, with statistically significant values (determined using the Benjamini-Hochberg procedure) highlighted in bold.

Table 6. Momentary sociocultural processes as predictors of momentary negative affect.

Predictors	*b*	*SE*	*z/t*	95% CI	*p*
Appearance comparisons					
UC vs. NC	0.28	0.03	8.44	0.22, 0.35	**<.001**
LC vs. NC	−0.05	0.06	−0.87	−0.17, 0.06	.384
DC vs. NC	−0.15	0.06	−2.37	−0.27, −0.03	**.018**
Internalisation					
TII	0.25	0.02	16.30	0.22, 0.28	**<.001**
FII	0.12	0.01	8.22	0.09, 0.15	**<.001**

z-scores are reported for appearance comparison outcomes (dichotomous); *t*-scores are reported for internalization outcomes (continuous). NC = no comparison; UC = upward comparison; LC = lateral comparison; DC = downward comparison; TII = thin-ideal internalization; FII = fit-ideal internalization. Raw *p*-values are shown, with statistically significant values (determined using the Benjamini-Hochberg procedure) highlighted in bold.

ideal internalization and greater fit-ideal internalization were significantly associated with greater negative affect. See Table 6 for the complete results of these main effects.

Moderating effects of SCC on momentary sociocultural processes and associated outcomes

After controlling for the false discovery rate with the Benjamini-Hochberg procedure, only three moderation effects were significant. First, trait SCC moderated the concurrent association between thin-ideal internalization and positive affect ($b = 0.03, SE = 0.01, p = .019$). Specifically, all three simple slopes were significant, indicating that higher levels of momentary thin-ideal internalization were associated with lower positive affect across all levels of trait SCC, but the simple slope was most pronounced among participants with low trait SCC (see Table 7).

In addition, both trait-level SCC ($b = -0.03, SE = 0.01, p = .016$) and momentary-level SCC ($b = -0.03, SE = 0.01, p = .005$) moderated the concurrent associations between fit-ideal internalisation and negative affect. Participants reporting greater momentary fit-ideal internalisation tended to have greater negative affect at all levels of trait and momentary SCC, and these slopes were largest among those with both low trait SCC (see Table 8) and low momentary SCC (see Table 9).

Full results for the moderations of sociocultural processes on related outcomes (i.e., body dissatisfaction, positive affect, and negative affect) are shown in Supplementary Tables S1–S3, respectively.

Discussion

Sociocultural appearance processes, including appearance comparisons and internalization of appearance ideals, are known risk factors for body dissatisfaction.

Table 7. Simple slopes of momentary thin-ideal internalisation and positive affect at different levels of trait self-concept clarity.

Level of Trait SCC	*b*	*SE*	*t*	95% CI	*p*
Low	−0.13	0.02	−7.18	−0.17, −0.10	<.001
Moderate	−0.10	0.01	−7.17	−0.13, −0.07	<.001
High	−0.07	0.02	−3.33	−0.11, −0.03	<.001

SCC = Self-concept clarity. Levels of SCC reflect 1 standard deviation below the mean (Low), at the mean (Moderate), and 1 standard deviation above the mean (High).

Table 8. Simple slopes of momentary fit-ideal internalisation and negative affect at different levels of trait self-concept clarity.

Level of Trait SCC	*b*	*SE*	*t*	95% CI	*p*
Low	0.14	0.02	7.38	0.11, 0.18	<.001
Moderate	0.11	0.01	7.84	0.08, 0.14	<.001
High	0.08	0.02	4.16	0.04, 0.12	<.001

SCC = Self-concept clarity. Levels of SCC reflect 1 standard deviation below the mean (Low), at the mean (Moderate), and 1 standard deviation above the mean (High).

Table 9. Simple slopes of momentary fit-ideal internalisation and negative affect at different levels of momentary self-concept clarity.

Level of Momentary SCC	*b*	*SE*	*t*	95% CI	*p*
Low	0.14	0.02	7.88	0.11, 0.17	<.001
Moderate	0.11	0.01	7.75	0.08, 0.14	<.001
High	0.08	0.02	4.37	0.04, 0.11	<.001

SCC = Self-concept clarity. Levels of SCC reflect 1 standard deviation below the mean (Low), at the mean (Moderate), and 1 standard deviation above the mean (High).

However, not everyone is equally affected by these processes, highlighting the importance of identifying the factors that increase individual susceptibility. Previous research suggests that lower SCC may increase susceptibility to sociocultural processes (Vartanian et al., 2018), leading to greater tendencies for appearance comparisons and internalization of societal appearance ideals (Vartanian & Nicholls, 2024). In this study, we sought to build on previous research by examining whether SCC would predict the frequency of appearance comparisons and degree of internalization of appearance ideals in women's daily lives.

Trait SCC and Momentary sociocultural processes

Consistent with our hypothesis and with previous research (Vartanian et al., 2025), individuals with lower trait SCC reported a greater number of total appearance comparisons over the five-day study period, as well as a greater number of upward comparisons. There was no association between trait SCC and the number of lateral or downward comparisons reported. These findings support the idea that people with lower SCC, who are uncertain about their identity, may rely more heavily on external cues to define and make sense of themselves (Campbell, 1990), and thus engage in more appearance comparisons in their daily lives. Furthermore, the specific relationship between SCC and upward comparisons aligns with Festinger's (1954) unilateral drive upward hypothesis, which states that individuals have a general tendency to compare themselves to those perceived as superior in domains that are personally relevant because they are motivated to improve themselves. In the context of appearance, this suggests that comparison targets who embody societally-valued attractiveness ideals are particularly salient, as they serve as aspirational reference points for evaluating one's own appearance and a benchmark that one might strive to achieve (McComb et al., 2023; Mills et al., 2002; Vartanian et al., 2025). It may be that, although individuals engage in social comparisons automatically (Gilbert et al., 1995), they then determine whether a target provides diagnostic information and only process those

comparisons that are deemed meaningful. Therefore, individuals attempting to define themselves may make more overall comparisons, but upward comparison targets are often the most informative in this context and, consequently, the most salient. Of course, this suggestion is speculative and requires attention in future research. In addition to the association between SCC and appearance comparisons, the current study also found that lower trait SCC was associated with greater internalization of both thin- and fit- ideals at the trait level and across the EMA period, replicating and extending prior research.

Momentary-level SCC and Sociocultural processes

One of the primary benefits of using an EMA design is that it allows us to examine processes at a momentary level in participants' daily lives, and this is the most novel contribution of the current study. We found that lower momentary SCC was associated with a greater likelihood of reporting an appearance comparison, both at the same survey (concurrent association) and at the next survey (prospective association). The same pattern was observed when looking specifically at the likelihood of reporting an upward comparison in particular. In contrast, momentary SCC was unrelated to the likelihood of reporting a downward or lateral comparison in both the concurrent and prospective analyses. These results extend previous work (e.g., Vartanian et al., 2025) by showing that momentary SCC is also linked to the likelihood of reporting an upward comparison in daily life. Taken together, this pattern suggests that the broader association between SCC and appearance comparisons may be primarily driven by upward comparisons, a possibility that warrants further exploration in future research.

One possible explanation for this pattern is that lateral and downward comparisons (vs. upward comparisons) were simply reported less frequently in our study, given that these two types of comparisons accounted for only a third of all comparisons in this study. However, other research has similarly found upward appearance comparisons to be more prevalent in daily life than are lateral or downward comparisons (e.g., Drutschinin et al., 2018, Fardouly et al., 2021; Rogers et al., 2017). Given the low frequency of lateral and downward comparisons in our data, it is possible that the study lacked sufficient power to detect any associations between SCC and these types of comparisons. To address this limitation, future research could employ experimental designs that directly test individuals' response to different types of comparison targets, and whether SCC impacts the related outcomes. For example, Carter and Vartanian (2022) found that individuals with lower (trait) SCC made more comparisons to idealized thin models (reflecting an upward comparison target) than did those with higher SCC. It may be valuable to explore whether similar or distinct patterns emerges when participants are exposed to lateral or downward comparison targets, such as images of everyday individuals or those representing more diverse body types.

The current study also extends previous research by examining internalization of appearance ideals at the momentary level. Although thin-ideal internalization has traditionally been conceptualized as a trait-level construct, recent research has provided preliminary evidence for a version of internalization at the momentary level (Fitzsimmons-Craft et al., 2016). No prior research, however, has investigated fit-ideal internalization at the momentary level. Findings from the current study suggest that lower momentary SCC

was associated with greater momentary thin-ideal internalization and fit-ideal internalization, both concurrently and prospectively (noting that the concurrent association for fit-ideal internalization was above the Benjamini-Hochberg corrected *p*-value, so should be interpreted with caution). That is, experiencing lower SCC at a specific time point was linked to greater internalisation both *at that moment*, and was also associated with greater internalisation *at the next survey*. Together, this builds on work by Fitzsimmons-Craft et al. (2016) and aligns with research showing that SCC can fluctuate over time and predict important psychological outcomes (e.g., Filosa et al., 2025; Schwartz et al., 2011). These findings underscore the importance of moment-to-moment identity instability in contributing to vulnerability to body image concerns (i.e., engaging in appearance comparisons and internalization of societal appearance standards). From a clinical or preventative standpoint, it could be that targeting SCC, whether through interventions aimed at boosting or stabilizing one's self-concept, could help buffer against sociocultural appearance processes and subsequent body dissatisfaction.

Does SCC moderate the associations between appearance comparisons and internalisation and related outcomes?

To better understand the role of SCC in this context, we also examined whether SCC moderated the associations between sociocultural appearance processes and body dissatisfaction and affect at the momentary level. Consistent with the rich literature on sociocultural appearance processes (e.g., Rancourt et al., 2016; Tiggemann & McGill, 2004) and with previous EMA research (e.g., Fardouly et al., 2017; Fuller-Tyszkiewicz et al., 2019), we found that upward comparisons were associated with higher body dissatisfaction and greater negative affect, whereas downward comparisons were associated with lower body dissatisfaction and greater positive affect. We further showed that both greater momentary thin-ideal internalization and greater momentary fit-ideal internalization were linked with higher body dissatisfaction, higher negative affect, and lower positive affect.

Regarding the role of SCC, our results suggest that most associations between sociocultural processes (comparison and internalization) and body dissatisfaction or affect were not moderated by SCC (either trait or momentary). These findings are consistent with the findings of Vartanian et al. (2025), who also found no moderating effect of trait SCC on the impact of comparisons. Together, these findings suggest that the relevance of SCC in this context is in terms of the likelihood of making an appearance comparison or the degree to which one internalizes the appearance ideals, rather than on the impact those sociocultural processes have on outcomes such as body dissatisfaction and affect. However, it should be noted that the present study may have had limited statistical power to detect moderation effects, particularly given the lower numbers of both lateral and downward comparisons reported relative to upward comparisons. Similarly, lagged analyses should be interpreted with caution, as the exclusion of surveys from the start of each day reduces the number of data points.

The only exceptions to the pattern noted above were that (1) the association between momentary thin-ideal internalization and positive affect was moderated by trait SCC, and (2) the association between momentary fit-ideal internalization and negative affect was moderated by both trait and momentary SCC. Specifically, individuals with lower trait SCC experienced lower positive affect associated with momentary thin-ideal internalization compared to those with moderate or higher SCC. Similarly, participants with lower SCC

(trait or momentary) experienced more negative affect associated with higher levels of momentary fit-ideal internalization. Of interest, the "fit-ideal" – a newer concept emphasizing both fitness and being toned – has garnered increasing attention, as its implications may be even more detrimental than the traditional thin-ideal (Donovan et al., 2020). Given the differential moderating role of SCC in these relationships, and considering the exploratory nature of this aspect of the study, future research should further examine how and why SCC may shape the emotional impact of thin-ideal and fit-ideal internalization. Research along these lines may provide deeper insights into the psychological mechanisms underlying vulnerability to sociocultural appearance processes.

Limitations and future directions

The current study enriches our understanding of the role of self-concept clarity in sociocultural appearance processes and body dissatisfaction, but it is also important to acknowledge some limitations to this work. First, momentary SCC was assessed using a single-item measure (as has been done in previous research; e.g., Alessandri et al., 2021; Chen et al., 2024; Scala et al., 2018; Schwartz et al., 2011), but a single item may not fully capture the complexity of SCC as a whole, potentially reflecting only certain aspects of the construct. Researchers have recently developed a multi-item scale for measuring momentary SCC, the Momentary Self-Concept Clarity Scale (M-SCCS; Ellison et al., 2022), and future research may benefit from using this measure to better explore real-time processes involving SCC.

Another limitation of this study is its exclusive focus on women, both due to higher prevalence of body dissatisfaction in women and limited prior researching examining SCC within this context. Although this focus allowed for the examination of sociocultural appearance processes among a high-risk group, it also limits the generatability of the findings to broader populations. There is evidence suggesting that the core pathways outlined in the Identity Disruption Model (which posits that disruptions to one's self-concept can increase vulnerability to sociocultural appearance processes and body dissatisfaction) are also relevant to men (Vartanian et al., 2018) and adolescent boys (Vartanian et al., 2023), but the nature of these appearance concerns may well differ. Whereas women are typically pressured to achieve thinness (and more recently, "fitness"), men often internalize muscular ideals (Cafri & Thompson, 2004). Similarly, future research should also examine whether the present findings replicate among gender-diverse individuals. For example, Gao et al. (2023) found that more negative feelings about one's gender minority identity were associated with lower SCC. This suggests that gender-diverse individuals may experience identity-related distress that contributes to lower SCC, which in turn may heighten vulnerability to sociocultural appearance pressures and body dissatisfaction. Thus, extending the current framework to consider more diverse populations could provide a better understanding of their experiences in their everyday lives and the factors contributing to these experiences. Future studies should explore whether the effects of SCC on sociocultural processes similarly apply to a broader range of populations. Additionally, investigating a wider array of outcomes related to SCC and sociocultural processes, such as drive for muscularity, excessive weightlifting, use of performance-enhancing drugs, and disordered eating focused on bulking or cutting, would offer a more comprehensive understanding of these dynamics across diverse groups.

Finally, although the EMA design confers a number of benefits related to ecological validity and uncovering the dynamic interplay among variables, these approaches are unable to establish cause and effect relationships. To address this limitation, future research should consider alternative methods, such as longitudinal studies that track changes over time, as well as experimental designs that manipulate core aspects of this framework (e.g., SCC) to test their casual relationships. Adolescence is a critical period for identity development, with key decisions about the self-concept typically occurring during this stage (Kroger et al., 2010). It is also a period when SCC becomes more firmly established (Crocetti et al., 2016), and body dissatisfaction often begins to emerge (Sands & Wardle, 2003). Future studies should explore how SCC relates to appearance comparisons, internalization, and body dissatisfaction over time, examining whether these influences change or reinforce each other (Vartanian & Hayward, 2018). Combining daily-life observations, long-term studies, and experimental approaches would provide a clearer and more comprehensive understanding of these relationships across different life stages and contexts.

Conclusions

This study highlights the significant role that SCC plays in appearance-related sociocultural processes (such as appearance comparisons and internalization of societal appearance ideals) and body dissatisfaction. Not only is lower *trait* SCC associated with more frequent appearance comparisons and greater internalization, but lower *momentary* SCC is associated with a greater likelihood of reporting an (upward) appearance comparison and with greater internalization of appearance ideals. Thus, lower SCC may increase vulnerability to the sociocultural processes that are in turn related to increased body dissatisfaction and lower mood. These findings highlight the role that lower SCC plays as a potential risk factor for poor psychological wellbeing. Future research is needed to explore the causal relationships between SCC, sociocultural processes, and body image outcomes, particularly across different populations and life stages.

Note

1. There were no significant differences in age, ethnicity, BMI, or trait-level measures (including self-concept clarity, thin-ideal internalization, fit-ideal internalization, appearance comparisons, and body dissatisfaction) between those who did or did not meet the 50%-compliance threshold. The only significant difference between the groups was in the number of EMA surveys completed, $t(270) = -30.32$, $p < .001$.

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Data availability statement

The data that supports the findings of this study are available from the corresponding author, [M.T.], upon reasonable request.

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