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Reveal or conceal your body? Differential manifestations of self-objectification are related to different patterns for women

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ABSTRACT

Body concealment, namely the attitudes and strategies specifically aimed at avoiding the other's gaze towards one's body, is here advanced as a relevant manifestation of chronic self-objectification. We juxtapose it to body exposure, that is the pursuit of being the object of others' gaze. Three validation studies conducted in Italy (Studies 1 and 2) and the UK (Study 3), and an additional focus group, showed that body concealment and exposure are distinct responses, both positively linked to self-objectification. Importantly, distinct dimensions of self-objectification were associated with body concealment and body exposure: the internalization of the observer's perspective was linked to body concealment *via* body shame; the internalization of objectifying ideals, instead, was associated with greater exposure (Study 4, Italy). Notably, body concealment, but not body exposure, was related to health issues typically linked to self-objectification, such as depression and disordered eating (Study 5, UK). Together, these studies ($N_{total} = 2853$) introduce body concealment as a new phenomenon within the sexual objectification framework, distinct from body exposure. From a theoretical perspective, this distinction reconciles seemingly contradictory evidence. From an applied point of view, body concealment has specific negative implications for women's well-being, deserving the attention of scholars and practitioners.

1. Introduction

In their landmark 1998 paper, Fredrickson and colleagues provided one of the first experimental pieces of evidence for self-objectification: the internalization of an observer's perspective towards one's body, and thus the perception of oneself and one's value through the lenses of an external, sexually objectifying gaze (Fredrickson et al., 1998). The paper bears the telltale title: "That swimsuit becomes you", to suggest that wearing a swimsuit (rather than a sweater) triggers self-objectification. When forced into *'swimsuits'* that thus *'become them'*, however, do women comply with the other's gaze, or do they reject it? In other words, in their everyday life, women may exercise the choice of exposing or concealing their bodies. If this choice is strategically aimed at pursuing or avoiding the other's gaze, then these opposing phenomena may, ironically, both reflect different manifestations of self-objectification.

We here advance that, in association to self-objectification, women may strategically toggle their visibility – either by concealing their

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bodies to avoid the observer's gaze, or by exposing their bodies to attract it. Even though both approaches may seem common to any lay woman, the literature has not yet fully explored these two alternatives, especially neglecting the first one. We therefore introduce body concealment as an important manifestation of chronic self-objectification. Body concealment, which has been primarily investigated in relation to clinical symptoms or samples (Davison & McCabe, 2005; Jewett et al., 2016), is a form of social avoidance that motivates women to hide their body or body parts from others, such as through the use of baggy clothes. Here, we juxtapose it to 'body exposure', defined as the propensity to exposing one's body to the gaze of others.

Placing body concealment and body exposure within the sexual objectification framework contributes to the field in two ways. First, the theoretical (and empirical) juxtaposition of body concealment and body exposure is essential: even if both of these motivated strategies stem from self-objectification, they may fundamentally differ in nature, or predict different psychological outcomes. Differentiating these dimensions may contribute to a more comprehensive understanding of the psychological impact of self-objectification. This nuance may also help to reconcile seemingly contradictory findings in the literature, such as the fact that higher self-objectification is positively linked to greater skin exposure (Felig et al., 2022), but also withdrawal from the body (Bailey et al., 2016; Choma et al., 2009).

Second, if body concealment and body exposure are differentially related to, for example, well-being, practical consequences follow: understanding body concealment and body exposure may be crucial for tailoring interventions aimed at women with high levels of chronic self-objectification. Addressing these motivated strategies may thus offer valuable insights for both research and interventions aimed at safeguarding women's well-being.

1.1. Sexual objectification and self-objectification

Sexual objectification is a process by which women are reduced to their bodies or their sexual functions, destined to the pleasure of, or consumption by, others (Fredrickson & Roberts, 1997). As an ubiquitous phenomenon in women's lives (Holland et al., 2017; Koval et al., 2019), sexual objectification can shift the way women are perceived at a neural and cognitive level, from full human beings to – quite literal – objects (e.g., Bernard et al., 2012, 2018; Vaes et al., 2019; but see Zogmaister et al., 2020). It can influence specific attitudes towards women, with sexually objectified women being deprived of competence, morality, and sociability (e.g., Heflick et al., 2011), and eliciting less empathy and helping (e.g., Cogoni et al., 2018; Pacilli et al., 2019). Sexual objectification also affects explicit and spontaneous behaviors towards objectified women, who are at greater risk of violence (e.g., Gervais & Eagan, 2017; Loughnan et al., 2013), including intimate partner violence (Crapolicchio et al., 2022; Pecini et al., 2023) and ostracism (Ruzzante & Vaes, 2024; see Ward et al., 2023 for a review).

Navigating a world in which, from an early age, they are confronted with sexual objectification may also induce women to interiorize this role of objects of (male) sexual desire and to adopt an observer perspective on their bodies. This phenomenon was dubbed self-objectification, namely the tendency to evaluate oneself more on the basis of observable characteristics (i.e., appearance and beauty) rather than internal attributes, such as thoughts, emotions, or personality (Fredrickson & Roberts, 1997; Roberts et al., 2018).

These self-perceptions come with clear psychological costs. According to objectification theory (Fredrickson & Roberts, 1997), self-objectification triggers intermediary psychological outcomes (i.e., body shame, appearance anxiety, safety anxiety, reduced flow, and reduced interoceptive awareness), which, in turn, can ultimately affect women's mental health, increasing the risk of disordered eating, depression, and sexual dysfunctions (see also Roberts et al., 2018). In support of this theorization, self-objectification has been associated to body shame (e.g., Miner-Rubino et al., 2002), appearance anxiety (i.e., anxiety of one's body being evaluated by others; e.g., Dimas et al., 2021), safety anxiety (e.g., Calogero et al., 2021), reduced flow experience (i.e., a positive state of complete immersion in a task; Greenleaf, 2005), and reduced interoceptive awareness (i.e., awareness of internal bodily states, such as hunger or fatigue; e.g., Ainley & Tsakiris, 2013). Furthermore, self-objectification is also related to an increased risk of developing eating disorders (Tiggemann, 2013; Tylka & Sabik, 2010), depressive symptoms (Jones & Griffiths, 2015), and sexual dysfunctions, among others (Calogero & Thompson, 2009; Steer & Tiggemann, 2008). The chain of relations posited by Fredrickson & Roberts, 1997 was later confirmed through mediation models (e.g., Calogero et al., 2021; Peat & Muehlenkamp, 2011; Tiggemann & Williams, 2012), although not all paths are supported (see Calogero et al., 2021, for a recent discussion). Furthermore, self-objectification was also associated with other aspects of wellbeing, namely lower self-esteem (Harned & Fitzgerald, 2002), substance abuse (Baildon et al., 2021), and overall worse life outcomes (Mercurio & Landry, 2008; see Ward et al., 2023 for a review), to name a few. Overall, sexual objectification shapes the way women are seen by others and see themselves, with harmful consequences.

1.2. Body concealment and body exposure

Objectification theory (Fredrickson & Roberts, 1997) stresses that self-objectification affects women's body image and research has highlighted its link with phenomena such as body shame or self-sexualization (i.e., engaging in behaviors aimed at increasing one's sexual appeal; Bell et al., 2018; Grower & Ward, 2021; Ruckel & Hill, 2017; Trekels & Eggermont, 2021). These phenomena are akin to body concealment and body exposure. Capitalizing on indirect, fragmented, yet converging evidence, we here offer a systematic positioning of these constructs within the sexual objectification framework.

We advance *body concealment* as those attitudes and strategies specifically motivated by avoiding the other's gaze. Body concealment may include behaviors, such as wearing baggy clothes, or attitudes and emotions, such as feeling uneasy when one's body parts are bare or noticeable: what is determinant of this construct is the strategic nature of these attitudes and behaviors, which are driven not by aesthetic preferences for clothing itself (e.g., Chattaraman & Rudd, 2006) but by its function of barrier between others and the body.

Body concealment was previously associated with body dissatisfaction and depression in individuals with systemic sclerosis (Jewett et al., 2016). Although, to our knowledge, body concealment was never conceptually and empirically linked to self-objectification, indirect evidence supports this connection. For example, wearing revealing clothing leads women to make smaller movements than wearing a sweater (Dimas et al., 2021), suggesting an attempt to become less visible. Similarly, women who receive sexually objectifying comments may try to disappear by talking less (Saguy et al., 2020), and girls who self-objectify are also more avoidant of social situations (Guo & Wu, 2023). Furthermore, in victims of sexual harassment, self-objectification predicts changes in many behavioral habits, including covering up and changing the way one dresses (Valtorta et al., 2022). Taken together, this evidence suggests that body concealment may serve as a motivated defensive response to self-objectification. For example, the pressure of a sexually objectifying culture may drive women to conceal their body in order to divert attention from it and protect themselves from sexually objectifying gazes.

If we limit our focus to behaviors, body concealment may overlap with *body avoidance*, defined by Rosen et al. (1991) as the avoidance of any potential triggers of concern about one's appearance (Rosen et al., 1991): body avoidance may, for example, manifest through the preference for greater body coverage in clothing (Chattaraman & Rudd, 2006), and may be elicited by interpersonal contexts, such as physical intimacy or situations in which one's body will be under scrutiny (Rosen et al., 1991). However, we argue here that the two constructs are theoretically distinguished by the origin of these behaviors: while body avoidance

stems from an individual's own concern about their appearance (making it self-oriented), body concealment is here conceived as a motivation to protect oneself from the other's gaze (and, thus, more other-oriented), making this construct more central to sexual and self-objectification.

We contrast body concealment to body exposure, namely the pursuit (rather than avoidance) of situations in which the body may be the object of others' gaze. Examples are wearing revealing clothes, which was previously linked to self-objectification (Felig et al., 2022), or enjoying being looked at. Conceptually, body exposure is similar to constructs such as self-sexualization (e.g., Trekels & Eggermont, 2021), enjoyment of sexualization (Liss et al., 2011), and gaze provocation (Hollett et al., 2022). However, it differs from these constructs because it is not inherently sexual and it is not limited to attracting men's gaze. As such, body exposure overcomes the (hetero)sexual perspective that features the aforementioned constructs. This is meaningful because, for one, objectifying experiences are not limited to the sexual domain (e.g., Morris & Goldenberg, 2015; Morris et al., 2018): expanding the investigation of self-objectification to non-sexual dimensions provides a more comprehensive and holistic understanding of the phenomenon. Moreover, this approach is inclusive of non-heterosexual women, who may still self-objectify.

Importantly, we conceptualize body exposure not as the opposite of body concealment, but rather as a qualitatively different psychological manifestation. In support of this distinction, previous evidence indirectly suggests that body image is differentially linked to the two strategies: while body avoidance is related to body image, this may not be the case for body exposure, which was found to be unrelated to body image (on social media; Ruckel & Hill, 2017).

1.3. The Present Research

This paper aims to advance the concepts of body concealment and body exposure in relation to self-objectification. To do so, we addressed the following questions:

1) Are body concealment and exposure related to self-objectification?
   In three correlational studies (Studies 1–3), we aimed to investigate the link between self-objectification and body concealment/exposure. To achieve this, we also aimed to develop and validate a scale assessing body concealment and body exposure, by testing its psychometric properties and demonstrating that these constructs are consistently associated not only with self-objectification, but also to other psychological constructs related to it.
   On this note, self-objectification is a complex construct, the operationalization of which is debated (Calogero et al., 2011; Lindner & Tantleff-Dunn, 2017). Some studies (e.g., Fredrickson et al., 1998) operationalized self-objectification as the relative value placed on how the body appears, rather than what it can do, deriving from the belief that one's body and appearance are representative of one's self (from here onwards, *body as self*). Other research (e.g., McKinley & Hyde, 1996) focused on the extent to which one thinks about their body as an external observer, which results in body surveillance behaviors, such as monitoring how one's body looks to others (from here onwards, *observer perspective*). However, Lindner and Tantleff-Dunn (2017) showed that these operationalizations may reflect distinct components of self-objectification. We adopt this approach and consider the *observer perspective* and *body as self* as separate dimensions.
2) What place do body concealment and body exposure have within the sexual objectification framework?

Referring to the original model by Fredrickson and Roberts (1997; see also Moradi & Huang, 2008), subsequently expanded by Calogero et al. (2021), we conducted two correlational studies. In Study 4, we explored whether the five psychological processes identified by the theory, namely body shame, appearance anxiety, safety anxiety, interoceptive awareness, and flow, link self-objectification to body concealment and exposure.

In Study 5, we focused on the relationship between self-objectification and health (such as disordered eating, depression, sexual functioning, and restricted freedom of movement), and explored whether body concealment and body exposure mediated these associations.

Finally, a Meta-Analytic Structural Equation Model was conducted including data from all studies, to verify the robustness of the relationship between self-objectification, body concealment, and body exposure (see supplementary materials).

1.3.1. Transparency and Openness

Supplementary materials, data, code, and original questionnaires for all studies are available on OSF: https://osf.io/ahpqr. We report how we determined our sample size, all data exclusions, and all measures in the studies, and we adhere to JARS (Appelbaum et al., 2018). Studies 1–3 were exploratory and, therefore, were not pre-registered. Hypotheses, design, and analyses of Studies 4 and 5 were pre-registered.

All questionnaires were developed on Qualtrics (https://www.qualtrics.com). Analyses were run on R (R Core Team, 2023), unless otherwise stated. The following models were employed: psych (for exploratory factor analyses and Cronbach's alpha; Revelle, 2025), gtsummary (for descriptives; Sjoberg et al., 2021), lavaan (for confirmatory factor analyses and SEM models; Rosseel, 2012), MBESS (for McDonald's omega; Kelley, 2022), and Hmisc (for correlations; Harrell, 2023).

For all studies, we applied a theory-based sampling procedure (Majid, 2023), and focused our data collection primarily on women in the 18–35 age cohort, as young women are the most frequent experiencers of self-objectification (Tiggemann & Lynch, 2001). Furthermore, all studies were introduced to participants as "a study investigating the relationship people have with their bodies", thus not mentioning body concealment and exposure explicitly. The structural validity of all measures was verified through Confirmatory Factor Analyses (see supplementary materials). For all measures, we analyzed mean scores in all analyses except the SEMs, which employed factor scores. Studies 1 and 2 were approved by the Ethical Committee for Psychological Research of the University of [blinded for review process] Padova (protocol number: 5285). Studies 4 and 5 were approved by the Ethical Committee of the University of [blinded for review process] Campania "Luigi Vanvitelli" (protocol number: 29/2023).

2. Are body concealment and exposure related to self-objectification?

If body concealment stems from sexual objectification pressures, it is plausible to predict that it is associated with self-objectification. Therefore, to investigate whether body concealment and body exposure are linked to self-objectification, we first explored in a focus group whether body concealment is experienced by women. Then, building on participants' narratives, we developed a short measure to assess body concealment and body exposure. The scale was included in three correlational studies alongside self-objectification to investigate our primary research question. In doing so, we simultaneously validated the measure, by including additional variables commonly associated with self-objectification (e.g., body shame) to determine its convergent and discriminant validity.

2.1. Focus Group

A detailed description and analysis of the focus group is available in the supplementary materials. The focus group involved seven female students. To ensure that body concealment could not be primed by researchers, the focus group was presented as having the aim to investigate women's experiences of sexist verbal aggressions and verbal gender harassment (explained to participants as 'sexual harassment' for their

understanding). Specific questions explored immediate reactions to, and long-term consequences of, gender harassment. After body concealment emerged spontaneously from discussion without being prompted, questions focused on body concealment concerns and behaviors, and motivations for it. A coding scheme was then defined by incorporating recurring themes (e.g., body concealment and exposure, identity, social comparisons concerns), as well as themes identified a priori from self-objectification literature (e.g., shame, objectifying gaze, self-objectification, body image concerns).

Without being prompted to do so, participants mentioned engaging in body concealment. Most instances of body concealment manifested through clothing, but also posture or make-up.

> *"[after a sexual harassment episode] before wearing that dress again I thought about it […] even if it's a dress I like a lot […] there's always that moment in which I think about it and I say 'but maybe this dress is too short'"* [P1]

> *"when I go out, most of the time I put [a short dress] on, I look at myself, I take it off, I put on baggy pants and go"* [P3]

Throughout the focus group, evidence emerged that body concealment stems from negative mental states commonly associated with self-objectification, such as shame and unease. Furthermore, the focus group suggested that two major concerns drive body concealment. The first was avoidance of sexual harassment and objectifying gazes. For example, one participant recounted that she started wearing bras in order to avoid the experience (and subsequent embarrassment) of men openly staring at her breasts. In this context, the concept of concealing as a way to reclaim one's body from others emerged:

> *"[I conceal because] I don't want people to […] feel entitled to look every time I bare a part of my body […] you don't even have the time to accept [your body, that] it doesn't concern you anymore"*. [P3]

The second concern was negative judgment by others. For instance, participants reported covering up 'unattractive' body parts (e.g., chest, glutes, legs) due to appearance-related anxiety, thus providing preliminary support for an additional link between body concealment and self-objectification. One participant highlighted that "*they don't just look at me to objectify me, but also because [not wearing a bra] does not look good on me*", to which another reiterated "*I'm not 'object' enough*". This last statement is particularly interesting, as it echoes the pressure reported by participants to conform to the sexually objectified standard by exposing their bodies ("*we're so used also through advertisements, internet, music videos […] dancers always dressed in a certain way, that you almost feel obligated to do the same*").

In sum, the focus group suggested that women may engage in body concealment as a defense against a sexually objectifying society, either more explicitly (i.e., wanting to avoid harassment and objectifying gazes) or more subtly, namely to avoid having one's body as representative of one's self (judgments about character) or to avoid sanctions for being non-compliant with a highly sexualized norm (judgments about appearance). Therefore, the need to cope with sexual objectification may lay the ground for body concealment.

2.2. Scale Development

Building on participants' narratives, we constructed an initial batch of items to assess body concealment and exposure. The original set of items was developed in English following both a deductive and an inductive strategy (Boateng et al., 2018). Initially, the first author extracted (and, if needed, adapted for our purposes) relevant items from existing measures of body image disturbance: the Body Concealment Scale for Scleroderma (Jewett et al., 2016), the Body Image Coping Strategies Inventory (Cash et al., 2005), the Body Image Avoidance Questionnaire (Rosen et al., 1991), and the Clothing and Body Questionnaire (Frith & Gleeson, 2004). Each item was then paired with opposing statements, related to exposing one's body. We then added statements extracted from the focus group, along with some items related to attractiveness, to show that, while attractiveness concerns emerged as a theme in the focus group, body concealment and exposure are separate from the desire to appear attractive. The resulting 54 items were independently categorized by all authors as either related to body concealment, to body exposure, to attractiveness, or to neither. Only the items for which most authors agreed about the categorization were retained; furthermore, items with equivalent content and items that would be less likely to apply to a male sample (e.g., 'I avoid wearing visible make-up/high heels') were excluded, for the purposes of facilitating scale adaptability to other samples in potential future research endeavors (see also General Discussion). This resulted in a final list of 27 items, which were translated into Italian through a process of back-translation. Original items, translations, and sources for each are available in the supplementary materials.

2.3. Study 1

In Study 1, we investigated the link between body concealment/exposure and self-objectification to test our hypothesis, as well as body-related variables (body esteem, appearance anxiety, and body shame/guilt) to determine convergent and discriminant validity of the scale.

2.3.1. Method

2.3.1.1. Participants. Participants were recruited by psychology students of an Italian university as part of a lab activity (students were instructed to share the link to the questionnaire with at least 10 people). After excluding 150 participants who did not complete the questionnaire, 52 participants who failed at least one attention check, and one underage participant, the final sample consisted of 685 women between 18 and 57 years old ($M = 23.18$, $SD = 5.34$; median = 21). The majority were students (50 %) or working students (22 %). On average, participants were politically left-leaning ($M = 38.35$, $SD = 27.10$, on a scale from 0 - *Left* to 100 - *Right*) and considered their socio-economic status to be similar to that of the average Italian family ($M = 53.96$, $SD = 16.99$, on a scale from 0 - *Much worse-off* to 100 - *Much better-off*).

2.3.1.2. Measures and Procedure. After agreeing to the consent form, participants were presented with demographic variables: gender (forced-choice, with options being "female", "male", and "non-binary"), age, education level, work status, political orientation, and subjective socio-economic status. Participants who did not indicate their gender as female were redirected out of the questionnaire. Participants were then presented with study variables: body concealment and exposure, drivers of body concealment and exposure, self-objectification (assessed through one of three possible measures), and body image (assessed through one of three possible measures). We randomly presented only one self-objectification scale, and one body image scale, to reduce response burden by limiting the length of the questionnaire (Rolstad et al., 2011), while simultaneously assessing the validity of our scale with a wider range of variables. At the end of the questionnaire, they were thanked and debriefed and had the possibility to leave comments through an open text-box.

2.3.1.2.1. Body Exposure and Concealment Scale (BECS). Participants indicated their agreement with the 27 initial items on scales from 1 - *Strongly disagree* to 5 - *Strongly agree*.

2.3.1.2.2. Drivers of Body Concealment and Exposure. We asked participants to indicate how frequently (1 – *Never* to 5 – *Always*) they engage in body concealment and body exposure ("*In deciding what to wear and how to look, people sometimes are driven to or want to hide [show] their body and their figure, or cover up [attract attention towards] parts of their body. Does this happen to you, or has it ever happened to you?*"), and what drives them to conceal and expose among the following (extracted

from the focus group): (1) "I do not want others to hit on me or look at me in a sexual way"; (2) "I do not want people to judge me for how I dress or my appearance and I don't want to make a bad impression"; (3) "I do not want to appear vain or superficial"; (4) "I want to fit in a beauty standard"; (5) "As a form of rebellion or self-expression"; (6) "For my personal safety or to protect myself"; (7) "I want to feel at ease"; (8) "I want to stand out"; (9) "The fact that my body is mine alone, and does not belong to others"; (10) "I want to conform to others"; (11) "I am worried about the people I will be with"; (12) "I want to be more attractive". Participants responded on scales from 1 – *Strongly disagree* to 5 – *Strongly agree*. Overall, a need for psychological safety, avoiding social judgment, and body ownership emerged as the primary drivers of body concealment and exposure (details and analyses are available in the supplementary materials).

2.3.1.2.3. Self-objectification. Participants were randomly assigned to, and completed, one of three scales. The first ($n = 232$) was the Self-Objectification Beliefs and Behaviors Scale (SOBBS; Lindner & Tantleff-Dunn, 2017), translated in Italian by Guizzo et al. (2024). The SOBBS assesses self-objectification in its trait form and includes the subscales Observer's Perspective (7 items, e.g., "I often think about how my body must look to others"; $\alpha = .90$) and Body as Self (7 items, e.g., "My body is what gives me value to other people."; $\alpha = .86$). Participants answered on scales from 1 - *Strongly disagree* to 5 - *Strongly agree*. The second scale ($n = 229$) was the Objectified Body Consciousness Scale - Surveillance (OBCS-S; McKinley & Hyde, 1996), in its Italian translation by Guizzo and Cadinu (2017; 8 items, e.g., "During the day, I think about how I look many times."; $\alpha = .67$). Participants answered on scales ranging from 1 - *Strongly disagree* to 5 - *Strongly agree*. The third ($n = 224$) was the Self-Objectification Questionnaire Likert version (SOQ; Wollast et al., 2021, in the Italian translation by Di Michele et al., 2023), which was preferred over the original rank-based format due to its superior psychometric properties and reduced data loss (Lindner & Tantleff-Dunn, 2017 and Wollast et al., 2021 for a discussion). Participants rated the importance of 5 attributes linked to physical competence (e.g., "health"; $\alpha = .79$) and 5 attributes linked to attractiveness (e.g., "measurements"; $\alpha = .76$) on scales from 1 - *Low impact* to 7 - *High impact*. SOQ overall scores were calculated by subtracting the importance of physical competence from the importance of attractiveness averages. The OBCS-S and the SOQ, however, presented poor CFA fit indices (see supplementary materials).

2.3.1.2.4. Body Image. For common psychological correlates of self-objectification, participants were randomly assigned to, and completed, one of three variables: body esteem ($n = 219$), appearance anxiety ($n = 233$), and body-related emotions (i.e., shame and guilt; $n = 233$).

Body esteem was measured using the validated Italian translation (Confalonieri et al., 2008) of the Body Esteem Scale for Adolescents and Adults (BESAA; Mendelson et al., 2001). Specifically, we used the two subscales Appearance (6 items, e.g., "I look as nice as I'd like to"; $\alpha = 78$), which assesses the degree to which responders appreciate their appearance (from here onwards, *body self-esteem*) and Attribution (4 items, e.g., "My looks help me get dates"; $\alpha = .68$), which assesses the degree to which the responders think that others appreciate their appearance (from here onwards, *body meta-esteem*). Participants answered on scales from 1 - *Strongly disagree* to 5 - *Strongly agree*. To measure *appearance anxiety*, we employed the validated Italian translation (Dakanalis et al., 2016) of the Social Appearance Anxiety Scale (SAAS; Hart et al., 2008). The scale includes 16 items (e.g., "I am afraid that people find me unattractive", $\alpha = .95$), with responses from 1 - *Strongly disagree* to 5 - *Strongly agree*. Finally, we assessed *body shame* ($\alpha = .91$) and *body guilt* ($\alpha = .91$) using the Body and Appearance Self-Conscious Emotions Scale (BASES; Castonguay et al., 2014), translated *ad hoc*. Participants responded on scales from 1 - *Never* to 7 - *Always*. In order to transpose the items in Italian, original wording was changed and two shame items were dropped. Since the number of items changed from the original version, an EFA was conducted (see supplementary materials) to ensure structural soundness of our 10-item abridged form of the scale. Results showed that two items ("*I feel guilty about my appearance*", "*I feel guilty when I look in the mirror*") loaded on the shame factor; therefore, we excluded these two items, resulting in four items for body shame ($\alpha = .91$) and four items for body guilt ($\alpha = .92$).

Results for body shame, body guilt, and appearance anxiety were very similar. Therefore, we only report body shame here for the sake of clarity and brevity (full results are available in the supplementary materials).

2.3.2. Results

2.3.2.1. Exploratory factor analysis and reliability. We tested the structural validity of the BECS as follows (see Carpenter, 2017). First, we verified that all items were normally distributed (skewness $< |1|$ and kurtosis $< |3|$) and were not outliers (> 3 Median Absolute Deviation). Then, data factorability was assessed through the Kaiser-Meyer-Olkin test for sampling adequacy, which showed good sampling adequacy (Overall MSA $= .96$, threshold $= .60$), and Bartlett's test of sphericity, which was significant, $\chi^2\ (351) = 9588.004$, $p < .001$.

We extracted four factors (identified through Kaiser criterion, screeplot, and parallel analysis, see supplementary materials) using principal axis factoring, and reiterated the analysis based on the following until we reached a suitable solution: (1) at least three items in each factor in order to capture the true central of each dimension; (2) high factor loadings ($> .40$); (3) communalities of items ($\geq .40$); (4) no cross-loadings; (5) theoretical convergence; (6) inter-item correlations

Table 1
Items, EFA Factor Loadings, and Item Communalities of the BECS (Study 1).

Items	Factor loadings		Communality
	1	2	
Body Concealment			
1. I am not comfortable when parts of my body (e.g., chest, legs) are bare or very noticeable *[Non mi sento a mio agio quando parti del mio corpo (es. petto, gambe) sono esposte o molto visibili]*	−0.05	**0.59**	0.39
7. I avoid wearing "revealing" clothes (eg. bathing suits, tank tops, or shorts) *[Evito di indossare vestiti scollati o succinti (es. costumi da bagno, canottiere, shorts)]*	−0.01	**0.69**	0.48
9. I want to hide my body *[Voglio nascondere il mio corpo]*	0.02	**0.81**	0.64
10. I wear clothes that conceal my figure *[Uso vestiti che nascondono il mio fisico]*	0.03	**0.83**	0.67
11. I wear clothes that will divert attention from my appearance *[Uso vestiti che distolgono l'attenzione dal mio aspetto fisico]*	−0.07	**0.68**	0.51
Body Exposure			
15. I like it when people look at my body *[Mi piace quando le persone guardano il mio corpo]*	**0.74**	−0.09	0.62
16. I wear clothes that will draw attention to my body *[Uso vestiti che attirano l'attenzione sul mio corpo]*	**0.77**	0.01	0.59
17. I enjoy showing my body *[Mi piace mostrare il mio corpo]*	**0.72**	−0.12	0.63
19. When I'm out or in public, I enjoy being "checked out" *[Quando sono fuori o in pubblico, mi piace essere guardata]*	**0.81**	0.06	0.61
21. I enjoy drawing attention to my figure or some parts of my body *[Mi piace attirare l'attenzione sul mio fisico o su alcune parti del mio corpo]*	**0.80**	0.06	0.58

Notes. The extraction method was principal axis factoring with an oblique (oblimin with Kaiser normalization) rotation. Factor loadings over .60 are in bold.

Table 2
Correlations of study variables with body concealment and body exposure (Studies 1–3).

	Study 1			Study 2			Study 3		
	M (*SD*)	Body concealment	Body exposure	*M* (*SD*)	Body concealment	Body exposure	*M* (*SD*)	Body concealment	Body exposure
Observer's perspective (SOBBS)	3.27 (1.03)	.27***	.10	2.81 (1.03)	.37***	.18***	3.21 (1.01)	.22***	.06
Body as self (SOBBS)	1.79 (0.75)	.25***	.17**	1.64 (0.71)	.16***	.39***	1.92 (0.75)	.03	.19**
Body surveillance (OBCS-S)	3.23 (0.68)	.08	.12	2.98 (0.73)	.17***	.17***	/	/	/
Importance of appearance (SOQ differential)	−0.48 (1.40)	−.07	.24***	/	/	/	/	/	/
Body shame (BASES)	3.39 (1.64)	.63***	−.28***	2.88 (1.61)	.55***	−.14***	2.75 (1.23)	.57***	−.35***
Body self-esteem (BESAA)	2.67 (0.87)	−.49***	.26***	/	/	/	/	/	/
Body meta-esteem (BESAA)	2.83 (0.84)	−.43***	.56***	/	/	/	/	/	/
Body Gazes (ISOS)	/	/	/	2.92 (0.92)	< .001	.23***	/	/	/
Unwanted Explicit Sexual Advances (ISOS)	/	/	/	1.95 (0.89)	.06	.21***	/	/	/
Body Comments (ISOS)	/	/	/	2.81 (1.01)	−.03	.24***	/	/	/
Dieting (EAT)	/	/	/	2.97 (1.10)	.35***	.04	/	/	/
Bulimia (EAT)	/	/	/	2.25 (1.07)	.39***	.08	/	/	/
Oral control (EAT)	/	/	/	2.31 (0.96)	.04	.16***	/	/	/
Gaze provocation	/	/	/	/	/	/	1.41 (0.59)	−.32***	.66***

Notes. *** $p < .001$, ** $p < .01$, * $p < .05$. Dashes indicate that variables were not assessed in the study.

(>.30). Finally, we applied the parsimony criteria, and retained only 5 items per dimension (based on content and factor loadings). In the final solution, two factors emerged (see Table 1), which explained 57 % of total variance: Body Concealment (M = 2.60, SD = 0.97) and Body Exposure (M = 2.47, SD = 0.94). Importantly, while attractiveness items were included in the EFA, they loaded on a separate factor in the first and second iteration of the analysis, and were dropped due to not satisfying the above-mentioned criteria in the second iteration (statistics for all iterations are available on OSF).

Internal consistency was assessed through Cronbach's alpha and omega total (Dunn et al., 2014), which were optimal for both Body Concealment (α =.85, 95 % CI [.83, .87]; ω =.85, 95 % CI [.84, .87]) and Body Exposure (α =.88, 95 % CI [.87, .90]; ω =.88, 95 % CI [.87, .90]).

Correlation between the two factors was high, $r(685) = -.50$, $p < .001$, but not so as to suggest that we were dealing with opposing poles of the same construct (see Marsh, 1986; 1996). Rather, the correlation indicated that, although strongly related, body concealment and body exposure were qualitatively different motivated strategies, also in line with the two-factor structure emerging from the EFA.

2.3.2.2. Correlations. As shown in Table 2, body concealment and exposure were positively related to self-objectification, albeit to different dimensions: body concealment was related to both subscales of the SOBBS, whereas body exposure to the importance of appearance over body competence (i.e., body as self and the SOQ differential), thus suggesting that these two measures may tap into different constructs or different dimensions of self-objectification.

Furthermore, most body image variables were more strongly correlated with body concealment than body exposure, with the exception of body meta-esteem. Interestingly, the correlation patterns were in opposite directions for body concealment and body exposure, even though both correlated positively with self-objectification.

2.4. Study 2

Study 2 aimed to confirm the structural validity of the BECS, as well as expand on the findings of Study 1. We assessed the BECS, self-objectification, and body shame (similar to Study 1). Additionally, we measured frequency of experiences of sexual objectification, as this should be related to both body concealment and exposure. To preliminary explore the link between body concealment and wellbeing, we included a measure of disordered eating, as this has been consistently related to other forms of body avoidance (e.g., Walker et al., 2018), as well as self-objectification (e.g., Tylka & Sabik, 2010).

2.4.1. Method

2.4.1.1. Participants. Participants were recruited by psychology students of an Italian university as part of a lab activity, as in Study 1. After excluding data from 48 participants who did not complete the questionnaire and 31 participants who failed at least one attention check, the final sample consisted of 629 women between 18 and 72 years old (M = 27.55, SD = 11.24; median = 22). The majority was either a student (40 %) or working student (21 %). On average, participants were politically left-leaning (M = 39.21, SD = 23.69) and considered their socioeconomic status to be similar to that of the average Italian family (M = 52.97, SD = 17.22).

2.4.1.2. Measures. After agreeing to the consent form, participants were presented with the same demographic variables as in Study 1, and those who did not indicate their gender as female were redirected out of the questionnaire.

Participants then completed the BECS[1], the SOBBS (α_{OP} =.90; α_{BAS} =.87; Lindner & Tantleff-Dunn, 2017) and the OBCS-S (α =.74 but poor CFA fit indices, see supplementary materials; McKinley & Hyde, 1996)

for *self-objectification*, and the BASES - Shame (α =.91; Castonguay et al., 2014) for *body shame*. These variables were assessed in the same way as in Study 1. Additionally, measures of incidence of sexual harassment, experiences of sexual objectification, and disordered eating were included in the questionnaire to investigate the link between body concealment and wellbeing (see below). At the end, participants were thanked, debriefed, and had the possibility to leave comments through an open text-box.

2.4.1.2.1. Experiences of sexual objectification. To assess incidence of sexual harassment and sexual objectifying experiences, we employed an Italian ad-hoc translation of the Interpersonal Sexual Objectification Scale (ISOS; Kozee et al., 2011), which showed a better fit as a three-factor solution, in line with the perpetrator version of the scale (Gervais et al., 2018). The scale investigates how frequently respondents are victims of body gazes (6 items, e.g., "How often have you noticed someone leering at your body?", α =.89), unwanted explicit sexual advances (4 items, e.g., "How often have you been touched or fondled against your will?", α =.84), and body comments (4 items, e.g., "How often have you heard a rude comment of a sexual nature regarding your body?", α =.84), on scales from 1 - *Never* to 5 - *Almost always*.

2.4.1.2.2. Disordered eating. We assessed *disordered eating* using an *ad hoc* translation of the Eating Attitudes Test (EAT; Garner et al., 1982), which asks participants how often they experience symptoms of disordered eating on scales from 1 - *Never* to 6 - *Always*. The scale includes three factors: Dieting (13 items, e.g., "I eat diet foods", α =.89), Bulimia and Food Preoccupation (6 items, e.g., "I vomit after I have eaten", α =.83) and Oral Control (7 items, e.g., "I cut my food into small pieces", α =.77). CFA fit indices for the scale were, however, poor (see supplementary materials).

2.4.2. Results

2.4.2.1. Confirmatory factor analysis and reliability. As in Study 1, we evaluated the items normality, outliers, and correlations of the items of the BECS. The CFA indicated that the two-factor model emerged in Study 1 had a satisfactory fit (CFI =.970, TLI =.961, RMSEA =.062, 95 % CI [.050,.074], SRMR =.045; cut-offs: CFI e TLI $\geq$.95; RMSEA $\leq$.08; SRMR $\leq$.08; Hu & Bentler, 1999). Correlation between the two factors again suggested that body concealment (M = 2.57, SD = 0.97) and body exposure (M = 2.28, SD = 0.92) were related, but qualitatively different, motivated strategies, $r(629) = -.39$, $p < .001$. Furthermore, both factors showed high values of Cronbach's alpha ($\alpha_{Concealment}$ = .83, 95 %CI [0.81, 0.86]; $\alpha_{Exposure}$ = .87, 95 %CI [0.85, 0.89]) and omega coefficients ($\omega_{Concealment}$ = .83; $\omega_{Exposure}$ = .87).

2.4.2.2. Correlations. Correlations (see Table 2) were consistent with Study 1. Once again, body concealment and exposure were positively correlated to self-objectification; somewhat similarly to Study 1, concealment was more associated with the observer-perspective dimension of self-objectification, whereas exposure with the body-as-self dimension of self-objectification. Shame was again more strongly related to concealment than exposure. Experiences of sexual objectification correlated with body exposure, but not body concealment, while the opposite was true for the dieting and bulimia subscales of the EAT.

2.5. Study 3

Study 3 aimed at validating the English version of the BECS. Again, we relied on self-objectification and body shame for construct validity. In Study 3 we also included the Gaze Provocation Behaviors scale (Hollett et al., 2022). For women, this scale assesses behaviors aimed at driving men's gaze towards one's body. While certain items (e.g., "No matter where I am, I typically wear revealing clothing") are similar to the body exposure subscale, the BECS is applicable beyond heterosexual interactions.

2.5.1. Method

2.5.1.1. Participants. Data were collected through Prolific Academic, with workers being paid £ 0.75 for their participation in the study, selecting women from the UK as participants. Number of participants was determined by resource constraints. Respondents who did not indicate their gender as female and who did not provide the consent to data processing were redirected outside of the questionnaire. Data from one participant were excluded because they failed at least one attention check.

The final sample included 293 British women between 18 and 88 years old (M = 42.09, SD = 13.17; median = 40). The majority consisted of employed workers (71 %). On average, participants were politically left-leaning (M = 38.53, SD = 20.71) and considered their socio-economic status to be similar to that of the average British family (M = 49.55, SD = 17.67).

2.5.1.2. Measures. After agreeing to the consent form, participants provided socio-demographic information (i.e., sex assigned at birth, age, education, work status, sexual orientation, political orientation, subjective SES), and those who did not indicate their gender as female were redirected out of the questionnaire.

Afterwards, participants were presented with the study variables: the BECS, the SOBBS (α_{OP} =.89; α_{BAS} =.87; Lindner & Tantleff-Dunn, 2017) for *self-objectification*, the BASES - Shame (α =.96; Castonguay et al., 2014) for *body shame*, and the Gaze Provocation Behaviors scale (α =.89; Hollett et al., 2022). All measures were assessed on 5-point Likert scales. At the end of the questionnaire, respondents provided demographic information; then, participants were thanked and had the possibility to leave comments through an open text-box.

2.5.2. Results

2.5.2.1. Confirmatory factor analysis (CFA) and reliability. As in Studies 1 and 2, we evaluated normality, outliers, and correlations of the items of the BECS. The CFA indicated that our two-factor model had a satisfactory fit (CFI =.975, TLI =.967, RMSEA =.067, 95 % CI [.048,.087], SRMR =.041). Both body concealment (M = 3.26, SD = 0.98) and body exposure (M = 2.08, SD = 0.93) showed high values of Cronbach's alpha ($\alpha_{Concealment}$ =.87, 95 %CI [0.85, 0.89]; $\alpha_{Exposure}$ =.91, 95 %CI [0.89, 0.93]) and omega coefficients ($\omega_{Concealment}$ =.86; $\omega_{Exposure}$ =.89).

2.5.2.2. Correlations. Correlations (see Table 2) were consistent with the previous studies. Body concealment and exposure were uniquely related to observer perspective and body as self, respectively. Furthermore, body shame was positively related to body concealment and negatively related to body exposure. In addition (and unsurprisingly), gaze provocation was positively related to body exposure and negatively related to body concealment; correlations, however, were not large enough to suggest that we were tapping into the same construct (see discussion below).

2.6. Discussion

Across three studies, we provided first evidence that body concealment and body exposure are associated with self-objectification, but in different ways. In particular, concealment was more linked to body monitoring in relation to the other's gaze (i.e., observer perspective), whereas exposure (albeit more weakly) was primarily related to the identity component of self-objectification (i.e., body as self).

Perhaps counter-intuitively, concealment and exposure emerged as distinct, rather than opposing, strategies. Indeed, low levels of body concealment did not fully overlap with high levels of body exposure (and vice-versa); instead, some participants reported low levels of both, suggesting a non-strategic management of their appearance, plausibly

deriving from low concerns about one's body (i.e., low self-objectification). Women who self-objectify may also exhibit body concealment *or* body exposure, based on whether objectification has been entirely internalized and has affected one's self-perception.

Nevertheless, the two constructs have divergent correlates. We here interpret that body exposure may be an attempt to set oneself as a primary agent within sexual objectification, given that body exposure correlates with participants' willingness to attract the male gaze (i.e., gaze provocation). These attempts may also be corroborated by positive reinforcement from society (as shown by the positive correlation with others' positive feedback regarding one's appearance, namely meta-esteem), which may thus be an important motivator behind exposure. This positive reinforcement may, possibly, protect women from the negative psychological outcomes of sexual objectification experiences, such as sexual harassment. In fact, body exposure was unrelated, or weakly associated, with health issues (disordered eating) and negative psychological states (body shame), even though women who engaged more in body exposure had also encountered more frequent sexual harassment (Study 2). This disparity can be interpreted through two distinct lenses.

First, experiencing sexual harassment frequently may lead women to develop a self-concept that is deeply intertwined with sexual objectification (i.e., body as self), which, in turn, can manifest in motivations to emphasize exposing the body. This internalized view equates their identity with sexual desirability, possibly leading women to engage in body exposure as a reflection of their self-perception. Another interpretation may be that women whose self-objectification is internalized to the point of affecting identity, and thus expose more, may be less able to recognize sexual objectification, including harassing behaviors, as such (Galdi & Guizzo, 2021). Therefore, they may report having experienced certain events in the ISOS (e.g., being whistled at), without labeling them as sexual harassment or sexual objectification. Both lines of reasoning may explain why harassment experiences were not related to body concealment, which is predominantly related to body monitoring, rather than body as self.

Body concealment is instead reported by those participants who suffered more the negative correlates of self-objectification, entailing negative emotions such as guilt, shame, and anxiety (Study 1), and higher risks of engaging in behaviors linked to disordered eating (bulimia symptomatology and dieting; Study 2). Our studies show that negative body image, and body shame in particular, strongly correlated with body concealment, in line with previous literature on systemic sclerosis (Jewett et al., 2016). Moreover, body concealment may be ineffective in protecting participants from sexual harassment, which they experience independently from their concealing attempts (as shown by the lack of correlation).

Studies 1–3 also had the important aim of developing and validating a scale to assess body concealment and body exposure. Across all studies, the BECS showed good structural and construct validity, and we generalized it to two languages/countries: Italian and English (UK). Results also allowed us to show that body concealment and exposure are not merely strategies to enhance or worsen one's appearance, as the attractiveness items loaded on a separate factor and did not overlap with either variable. In a similar way, Study 3 showed that, while strongly correlated, body exposure was not completely overlapping with gaze provocation (as conceptualized by Hollett et al., 2022). One speculative interpretation for these results may be that gaze provocation is specifically directed at men's gaze (and, therefore, restricted to an heterosexual perspective), whereas body exposure has no such limitation. This specificity of the gaze provocation scale may also explain the floor effect found (45 % of the data), once again highlighting the importance of the BECS.

More generally, Studies 1 and 2 faced the challenge of comparing the BECS with existing scales that did not perform optimally: only few measures demonstrated good fit indices, even though they are frequently employed by the literature. This was particularly true for self-objectification, with both the SOQ and the OBCS-S performing sub-optimally in the CFA, making results on these variables inconclusive. Furthermore, the SOQ was not associated with other common correlates of self-objectification (see supplementary materials). The limitations of the SOQ have already been discussed by previous authors (e.g., Lindner & Tantleff-Dunn, 2017). As for the OBCS-S, poor factorial structure may be explained by the fact that, beyond body surveillance, some items in this scale also tap into the 'body as self' dimension of self-objectification. The BECS, as such, represents a valuable advancement in the objectification literature, addressing the need for more robust and effective measurement tools.

3. What place do body concealment and body exposure have within the sexual objectification framework?

3.1. Study 4

After having confirmed that body concealment and body exposure were linked to self-objectification, the next step was to investigate what place body concealment may have within the objectification theory framework. Therefore, Study 4 explored the potential correlates linking self-objectification and body concealment/exposure. Specifically, we investigated whether the psychological mechanisms identified by Calogero et al., Tylka, Siegel, Pina, & Roberts, (2021; see also Fredrickson & Roberts, 1997), namely body shame, appearance anxiety, safety anxiety, interoceptive awareness, and flow experience, mediated the link between self-objectification and body concealment/exposure. We did not make predictions concerning the links between these psychological processes and body concealment/exposure. This study was preregistered at https://aspredicted.org/MC9_X9C.

3.1.1. Method

3.1.1.1. Participants. Sample size was determined through the A-priori Sample Size Calculator for structural equation models (Soper, 2021), which recommended at least 700 participants to test our structural model (9 latent variables and 72 observed variables) and detect a small-medium effect (.20) with $p = .05$ and power = .90.

Data were collected through Prolific Academic, with workers being paid £ 1.50 for their participation in the study, selecting Italian women as participants. After excluding one participant who did not confirm their consent to data processing at the end of the study and two participants who failed at least one attention check, the final sample consisted of 700 women between 18 and 72 years old ($M = 30.97$, $SD = 10.03$). The majority were employed workers (36 %) or students (26 %). On average, participants were politically left-leaning ($M = 27.44$, $SD = 20.44$; median = 27) and considered their socio-economic status to be similar to that of the average Italian family ($M = 50.51$, $SD = 16.49$).

3.1.1.2. Measures. After agreeing to the consent form and indicating their gender (so that men and non-binary participants could not go forward with the study), participants completed the study variables: the SOBBS (α_{OP} =.88; α_{BAS} =.84; Lindner & Tantleff-Dunn, 2017) for *self-objectification*, the SAAS (α =.96; Hart et al., 2008) for *appearance anxiety*, and the BASES - Shame[2] (α =.94; Castonguay et al., 2014) for *body shame*. Moreover, in line with Calogero et al. (2021), we measured *dispositional flow*, *interoceptive awareness*, and *safety anxiety* (see below). Finally, we assessed the BECS. After providing socio-demographic information (i.e., sex assigned at birth, age, education, work status, sexual orientation, political orientation, subjective SES, and marital status), participants were debriefed, asked to confirm consent to data processing provided at the beginning of the study, and were allowed to leave any comments through an open text box.

3.1.1.2.1. Dispositional flow. An adapted version of the Short Dispositional Flow Scale (DFS; Jackson et al., 2008), translated *ad hoc,*

was used. The scale was adapted so that it could be applied to any kind of activity that women undertake (see materials on OSF; e.g., "I have a strong sense of what I want to do"). Participants answered on scales from 1 - *Strongly disagree* to 5 - *Strongly agree* (α =.81).

3.1.1.2.2. Interoceptive awareness. Following Calogero et al. (2021), interoceptive awareness was assessed through the Noticing (4 items, e.g., "I notice when I am uncomfortable in my body"), Emotional Awareness (5 items, e.g., "When something is wrong in my life I can feel it in my body"), and Body Listening (3 items, e.g., "I listen to my body to inform me about what to do") subscales of the Multidimensional Assessment of Interoceptive Awareness (MAIA; Mehling et al., 2012), which were translated *ad hoc*. Participants answered on scales from 1 - *Never* to 6 - *Always*. Following Calogero et al. (2021), items were averaged into a single index of interoceptive awareness (α =.90).

3.1.1.2.3. Safety anxiety. Safety anxiety was measured through the Personal Safety Anxiety and Vigilance Scale (PSAVS; Calogero et al., 2021; e.g., "I feel nervous about my safety when I am alone"), translated *ad hoc*. Participants answered on scales from 1 - *Completely different from me* to 7 - *Completely like me* (α =.78).

3.1.2. Results

3.1.2.1. Confirmatory Factor Analysis and Reliability. As in the previous studies, we evaluated the items normality, outliers, and correlations of the BECS. The CFA indicated that our two-factor model had a satisfactory fit (CFI =.94, TLI =.93, RMSEA =.10, 95 % CI [.09,.11], SRMR =.05). Importantly, accounting for the covariances between items 1 and 7, and items 15 and 19, the fit of the model notably improved (CFI =.98, TLI =.97, RMSEA =.07, 95 % CI [.06,.08], SRMR =.04). Both factors showed high values of Cronbach's alpha ($\alpha_{Concealment}$ =.87, 95 %CI [0.85, 0.89]; $\alpha_{Exposure}$ =.90, 95 %CI [0.89, 0.92]) and omega coefficients ($\omega_{Concealment}$ =.85; $\omega_{Exposure}$ =.88). Additional analyses (see supplementary materials) showed measurement invariance between heterosexual and non-heterosexual participants.

3.1.2.2. Correlations. In line with Studies 2 and 3, body concealment was associated more with the observer perspective dimension of self-objectification, whereas body exposure with the body as self dimension (see Table 3). In line with the previous studies, compared to body exposure, body concealment correlated more with body shame and appearance anxiety. However, safety anxiety did not show a strong correlation with body concealment.

3.1.2.3. Hypothesized Model Evaluation and Mediations. To test the mediation model, we conducted a latent variable structural equation modeling, also accounting for the measurement model. According to Mardia's test results, the assumption of multivariate normality was partially violated (Multivariate Skewness = 115.79, $p < .001$; Multivariate Kurtosis = 0.54, $p = .588$). This result has direct implications on the selection of the parameter estimation method (Finney & DiStefano, 2008). We decided to use the Mean and Variance Adjusted Maximum Likelihood (MLM) estimator, also known as the Satorra-Bentler correction. The hypothesized model (available in the supplementary materials) did not reach a satisfactory fit (CFI =.88, TLI =.88, RMSEA =.05, 95 % CI [.04,.05], SRMR =.07); furthermore, it presented βs > 1.00, which is usually a symptom of multicollinearity (Deegan, 1978). Indeed, the high correlation between body shame and appearance anxiety caused an issue of multicollinearity (appearance anxiety VIF = 5.81, a common cut-off being VIF $\geq$ 5).

Therefore, we tested the same model excluding appearance anxiety and interoceptive awareness (given that the CFA fit indexes of the MAIA were poor, see supplementary results)[3]. The assumption of multivariate normality was partially violated (Multivariate Skewness = 96.53, $p < .001$; Multivariate Kurtosis = 0.12, $p = .907$). This time, the model was optimal (CFI =.93, TLI =.93, RMSEA =.04, 95 % CI [.04,.04], SRMR =.06). Among our three mediators, only shame meaningfully linked self-objectification to body concealment and exposure (see Fig. 1). Specifically, higher scores of observer perspective were associated with higher concealment (β =.49, BootLLCI =.39, BootULCI =.56, $p < .001$) and lower exposure (β = −.41, BootLLCI = −.50, BootULCI = −0.32, $p < .001$) through increased body shame. Additionally, a negligible mediating effect of flow between observer perspective and body exposure emerged (β = −.03, BootLLCI = −.05, BootULCI = −.003, $p = .024$). Partial correlations (see supplementary materials) also support these paths.

3.1.3. Discussion

Results of Study 4 showed that, among our mediators, only the variables related to body image (body shame and appearance anxiety) were meaningfully linked to body concealment and exposure, whereas flow, interoceptive awareness, and safety anxiety had weak or very weak associations with the two strategies (Cohen, 1988; Gignac & Szodorai, 2016). Consistently, the mediation model revealed that shame was the stronger correlate linking self-objectification to body concealment, even outperforming appearance anxiety. Plausibly, body-monitoring triggers negative body attitudes (as evidenced by the literature, (e.g., Fredrickson et al., Roberts, Noll, Quinn, & Twenge, 1998)), which may drive women to conceal their bodies from others' gaze as an avoidance strategy, in line with the narrations emerged from the focus group (e.g., a participant mentioning "*they don't just look at me to objectify me, but also because [not wearing a bra] does not look good on me*").

Turning to body exposure, this was directly positively linked to body as self. It may be that when women internalize self-objectification so far as to believe their body to be more valuable than their inner world, they may expose it as a way to conform to this norm, in line with what emerged from the focus group concerning compliance with the sexualized beauty standards promoted by the media.

3.2. Study 5

The final aim was to explore the potential applied relevance of body

Table 3
Correlations among variables (Study 4).

	M (*SD*)	1	2	3	4	5	6	7	8	9	10
1. Body concealment	2.81 (1.01)	–									
2. Body exposure	2.18 (0.89)	−.53***	–								
3. Observer's perspective (SOBBS)	3.32 (0.91)	.29***	.09*	–							
4. Body as self (SOBBS)	2.00 (0.68)	.10*	.28***	.55***	–						
5. Body shame (BASES)	2.66 (1.17)	.55***	−.27***	.60***	.33***	–					
6. Appearance anxiety (SAAS)	3.00 (1.03)	.48***	−.19***	.72***	.41***	.87***	–				
7. Safety anxiety (PSAVS)	4.46 (1.09)	.14***	−.03	.35***	.12**	.22***	.32***	–			
8. Interoceptive awareness (MAIA)	3.98 (0.96)	−.10*	.15***	.08*	−.001	−.10**	−.06	.18***	–		
9. Dispositional flow (DFS)	3.29 (0.58)	−.19***	.15***	−.20***	−.15***	−.30***	−.32***	−.12**	.29***	–	
10. Age	30.97 (10.03)	.02	.05	−.04	.02	−.04	−.04	−.10**	.03	.05	–

Notes. * $p < .05$, ** $p < .01$, *** $p < .001$

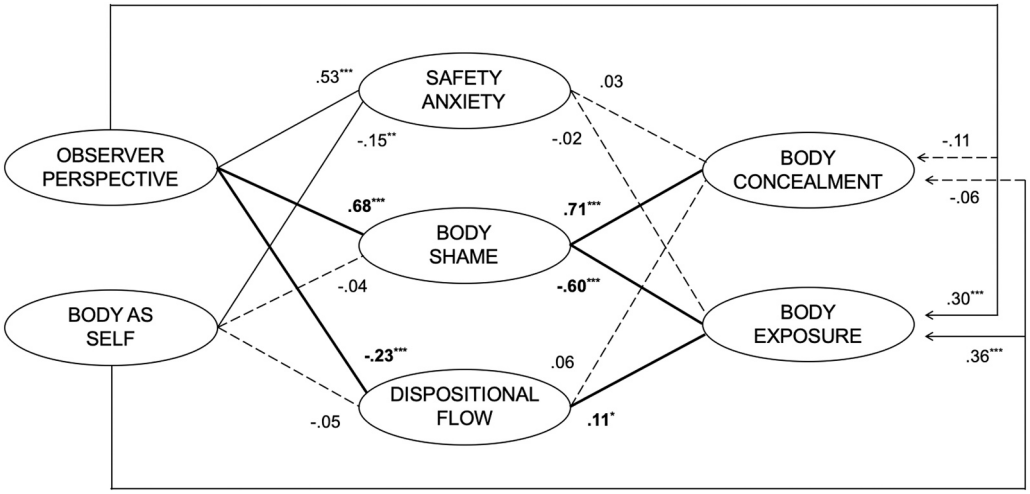

Fig. 1. SEM model (Study 4). *Notes.* *** $p < .001$, ** $p < .01$, * $p < .05$. Dashed lines indicate non-significant paths. Bolded lines and text indicate significant mediational paths.

concealment and body exposure in the domain of women's health. Therefore, Study 5 investigated whether concealment and exposure are linked to well-being, and to common health correlates of self-objectification in particular. In line with Calogero et al. (2021), we focused on restricted freedom of movement, disordered eating, depressed mood, and sexual functioning. This study was pre-registered at: https://aspredicted.org/T6Z_2Q2.

3.2.1. Method

3.2.1.1. Participants. Sample size was determined through the A-priori Sample Size Calculator for structural equation models (Soper, 2021), which indicated that at least 547 participants were recommended to test our structural model (8 latent variables and 57 observed variables) and detect a small-medium effect (.20) with $p = .05$ and power = .90.

Data were collected through Prolific Academic, with workers paid £ 1.20 for their participation in the study, selecting women from the UK as participants. We only included female workers who were younger than 45. Data from 7 participants who failed at least one attention check were excluded.

The final sample consisted of 546 women between 18 and 64 years old[4] ($M = 32.84$, $SD = 7.17$; median = 32). The majority of them were employed workers (78 %). On average, participants were politically left-leaning ($M = 34.26$, $SD = 21.68$) and considered their socio-economic status to be similar to that of the average British family ($M = 51.02$, $SD = 18.10$)

3.2.1.2. Measures. After agreeing to the consent form, participants were presented with the same demographic variables as Study 3, and those who did not indicate their gender as female were redirected out of the questionnaire.

Subsequently, participants were presented with the SOBBS (α_{OP} =.903; α_{BAS} =.87; Lindner & Tantleff-Dunn, 2017), the BECS, and measures of disordered eating, depressive symptoms, sexual dysfunctions, and restricted freedom of movement (see below). At the end of the questionnaire, participants were debriefed, asked to confirm the consent provided at the beginning of the study, and given the opportunity to leave comments through an open text-box.

3.2.1.2.1. Disordered eating. Disordered eating was measured through the Eating Disorder Examination Questionnaire – Short (EDEQ-S; Gideon et al., 2016). The EDEQ includes 10 items assessing frequency of symptoms of disordered eating (e.g., "Have you had a strong desire to lose weight?") in the past week on scales from 1 - *0 days* to 4 - *6–7 days*, and two items concerning weight ("Has your weight or shape influenced how you think about (judge) yourself as a person?", "How dissatisfied have you been with your weight or shape?") on scales from 1 - *Not at all* to 4 - *Strongly* (α =.90).

3.2.1.2.2. Depression. The 7-item Center for Epidemiologic Studies Depression Scale - Short (Eaton et al.; 2004; Levine, 2013), was included to assess the frequency of depressive symptoms (e.g., "I felt depressed"; α =.87), on scales from 1 - *Not at all or less than 1 day* to 5 - *Most or all days (5–7 days)*.

3.2.1.2.3. Sexual dysfunctions. Sexual dysfunctions were assessed through the Female Sexual Function Index – Short (FSFI6; Isidori et al., 2010). The scale measures the quality of different sexual functions in the past month, on 5-point scales. Following Calogero et al. (2021), we only included the items for Desire ("How would you rate your level of desire or sexual interest?"), Arousal ("How would you rate your level of arousal during sexual activities or intercourse?"), Orgasm ("When you received sexual stimulation or had intercourse, how often did you reach orgasm?"), and Satisfaction ("In general, how satisfied are you with your sexual life?"). For the arousal and orgasm items, scores of participants who reported not having had sexual activity in the past four weeks ($n = 162$) were treated as system missing, and scores of sexual dysfunction were calculated by averaging the remaining items. Responses were recoded so that high scores indicate sexual dysfunctioning (α =.83).

3.2.1.2.4. Restricted freedom of movement. We employed the items developed by Calogero et al. (2021), which include 10 strategies women may engage in for personal safety and that restrict freedom (e.g., "change routine or activities"). Differently from the original scale, participants provided their responses on scales from 1 - *Never* to 5 - *Always*, which were averaged to obtain a single score of restricted freedom of movement (α =.84).

3.2.2. Results

3.2.2.1. Confirmatory factor analysis and reliability. The CFA indicated that our two-factor model had a satisfactory fit (CFI =.95, TLI =.94, RMSEA =.09, 95 % CI [.08,.10], SRMR =.05). Both factors showed high values of Cronbach's alpha ($\alpha_{\text{Concealment}}$ =.86, 95 %CI [0.84, 0.88]; α_{Exposure} =.90, 95 %CI [0.88, 0.92]) and omega coefficients ($\omega_{\text{Concealment}}$ =.86; ω_{Exposure} =.89). Additional analyses (see supplementary materials) showed measurement invariance between heterosexual and non-heterosexual participants.

3.2.2.2. Correlations. Correlations (see Table 4) supported results emerged in previous studies. Importantly, disordered eating and

Table 4
Correlations among variables (Study 5).

	M (*SD*)	1	2	3	4	5	6	7	8	9
1. Body concealment	3.16 (0.97)	–								
2. Body exposure	2.19 (0.92)	−.60***	–							
3. Observer perspective (SOBBS)	3.56 (0.92)	.37***	.10*	–						
4. Body as self (SOBBS)	2.33 (0.76)	.20***	.24***	.64***	–					
5. Disordered Eating	1.80 (0.63)	.41***	−.05	.58***	.47***	–				
6. Depression	1.98 (0.69)	.22***	−.002	.33***	.23***	.44***	–			
7. Sexual dysfunctions	3.34 (1.08)	.30***	−.28***	.13**	.08	.14**	.21***	–		
8. Restricted freedom	2.53 (0.81)	.15***	−.10*	.24***	.15***	.21***	.22***	−.01	–	
9. Age	32.84 (7.17)	.04	−.14*	−.22***	−.17***	−.09*	−.13**	.08	−.19***	–

Notes. * $p < .05$, ** $p < .01$, *** $p < .001$.

depression were positively correlated to body concealment, but not exposure. Specifically, concealing one's body was related to a higher frequency of this symptomatology. Body concealment was also related to decreased sexual functioning, as well as greater engagement in strategies for one's safety. Body exposure, instead, was linked to greater sexual functioning and greater freedom of movement.

3.2.2.3. Hypothesized model evaluation and mediations. To test the mediation model, we conducted a latent variable structural equation modeling with maximum likelihood estimation, also accounting for the measurement model. According to Mardia's test results, the assumption of multivariate normality was violated (Multivariate Skewness = 245.91, p < .001; Multivariate Kurtosis = 2.48, p = .013). Therefore, we applied the Satorra-Bentler correction to estimate the model parameters. The hypothesized model reached a satisfactory fit (CFI =.92, TLI =.92, RMSEA =.04, 95 % CI [.04,.04], SRMR =.06). Results (see Fig. 2) showed that concealment significantly predicted disordered eating and depression, and mediated the link between observer perspective and disordered eating (β =.17, BootLLCI =.04, BootULCI =.19, p = .004). All other indirect effects were non-significant or unstable. Importantly, body exposure did not predict any health issue. Partial correlations largely support these paths (see supplementary materials).

3.2.3. Discussion

Study 5 shows the relevance of body concealment and body exposure for women's health and wellbeing. Body concealment was positively linked to disordered eating, in line with self-objectification, and to depression. This result is consistent with the evidence linking depression to shame and anxiety (Jones & Griffiths, 2015), on the one hand, and to avoidance behaviors, such as withdrawal (Moulds et al., 2007; Trew, 2011), on the other.

Moreover, in line with the evidence by Barnett et al. (2018) on enjoyment of sexualization, body exposure was negatively associated with a healthy sexual functioning, although this relation was not present in the SEM model. This inconsistency reflects the literature, according to which enjoyment of sexualization is negatively related to relationship satisfaction (Ramsey et al., 2017), but positively related to psychosexual health, such as sexual self-esteem (Barnett et al., 2018). Therefore, additional studies are needed to further investigate the direction of mechanisms linking body concealment and exposure to wellbeing, for example through qualitative interviews of clinical samples or longitudinal designs. For example, these health issues may be driven by a more negative (depression and disordered eating) or positive (sexual functioning) body image, possibly reinforced by body concealment and exposure. Alternatively, an increased focus on the body (disordered eating) or a more negative attitude towards the self (depression) may drive body concealment, while a healthy sexual functioning may reinforce self-esteem and lead women to expose.

Finally, restrictions to one's freedom were not associated with body concealment, in line with the fact that safety concerns were not linked to body concealment. However, another possibility is that body concealment may be a sufficient strategy, so that participants do not feel the need to engage in other freedom-restrictive strategies to protect their safety.

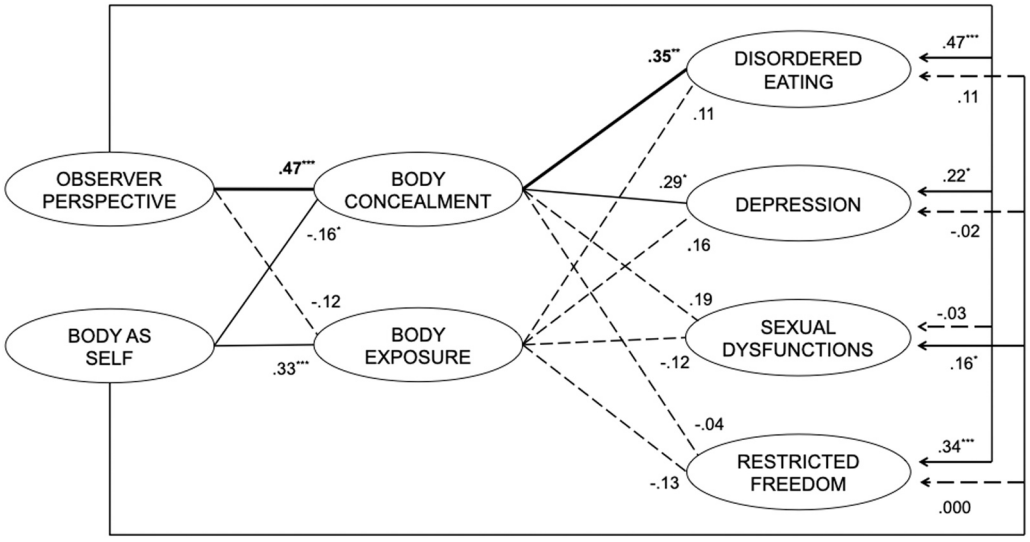

Fig. 2. SEM model (Study 5). *Notes.* *** $p < .001$, ** $p < .01$, * $p < .05$. Dashed lines indicate non-significant paths. Bolded lines and text indicate significant mediational paths.

4. General discussion

Across a focus group and five studies, we introduce and operationalize body concealment as an avoidance response to self-objectification that is juxtaposed to body exposure. Through both qualitative and quantitative means, we demonstrate that body concealment and body exposure are motivated strategies that i) women engage in when facing sexual objectification (focus group), and ii) are related to the observer-perspective and body-as-self dimensions of self-objectification, respectively (all studies), in both Italian (Studies 1, 2, 4) and British (Studies 3, 5) samples. This relation was corroborated through an internal Meta-Analytic Structural Equation Model including all studies, although caution is required as the model was just-identified (see supplementary materials).

We also identified relevant correlates (e.g., negative body image) linking self-objectification to body concealment and exposure, grounding these variables within the sexual objectification framework (Studies 1–4). Finally, we showed that body concealment is linked to women's mental health, suggesting that it may have real life implications for women's wellbeing (Study 5).

4.1. Theoretical and applied implications

This work has both theoretical and applied relevance. From a theoretical perspective, the investigation of body concealment and exposure contributes to systematizing apparently contradicting evidence, such as self-objectification being simultaneously positively linked to body shame and enjoyment of sexualization (Baildon et al., 2021). We do so, by taking from: i) the self-objectification literature (e.g., Trekels & Eggermont, 2021), which, concerning behavioral responses, has mostly focused on self-sexualization (i.e., body exposure); and ii) the body image literature (e.g., Walker et al., 2018), which has focused more on body avoidance (i.e., body concealment). By assessing body exposure and body concealment simultaneously, we are able to validate both responses and emphasize their specificity, which would otherwise remain masked by their opposite relations with other variables.

We made this assessment possible by developing and cross-culturally validating a scale, the BECS, that measures both dimensions. The BECS performed optimally in both English and Italian, and (contrary to existing measures) can reliably be employed with both heterosexual and non-heterosexual participants, as it showed measurement invariance between the two groups (see supplementary materials). Furthermore, while the measure was validated on a sample of young women, employing a self-report scale (rather than assessing clothing behaviors specifically, e.g., Chattaraman & Rudd, 2006), with items focusing primarily on the subjective experience of the participants (e.g., "I want to hide my body"), facilitates the use of the scale to other populations for whom norms around clothing may be different (such as older women).

To the best of our knowledge, this was the first set of studies to empirically investigate the cognitive component (i.e., body monitoring or observer perceptive) and the identity-based component (i.e., body as self) of self-objectification (Lindner & Tantleff-Dunn, 2017) separately, rather than as a single self-objectification dimension. Our studies strongly support the worth of separating the two components, both conceptually and analytically, as we demonstrate that they predict different (and opposing) constructs.

From an applied perspective, our work provides insights that may be relevant in designing self-objectification-focused interventions aimed at safeguarding women's wellbeing (see Tylka & Augustus-Horvath, 2011).

For example, while there is a great focus on self-sexualization (linked to body exposure) of young girls and women (e.g., the APA report on sexualization of girls; American Psychological Association, 2007), all our studies point to the fact that body concealment may also reflect negative mental states and risks for women. Indeed, across all our studies, concealment, rather than exposure, was linked to poorer health and wellbeing. Assuming that body concealment is a natural response to self-objectification, it may also likely be widespread, making these findings relevant for a broader population. Currently, research on concealment has focused on specific samples (e.g., Jewett et al., 2016). Conversely, here we show that it can possibly affect any woman. For example, extreme forms of body concealment may drive a disconnect between the self and the body, as suggested within our focus group. This disconnect may prove to be just as problematic for women as the complete overlap between body and self that comes with the 'body as self' component of self-objectification. Therefore, interventions designed at countering sexual objectification of girls and women should also address body concealment and its negative repercussions.

Body concealment should also be taken into account within the clinical setting. Previous literature has highlighted the relevance of clothing for mood and depressive disorders, and, in particular, the fact that clothing may be strategically employed to regulate psychological variables (e.g., for reassurance or comfort; Dubler & Gurel, 1984; Kang et al., 2013; Kim & Lee, 1999). Similarly, we here provide evidence for the link between body concealment, disordered eating, and depression. Within clinical practice, body concealment may be a warning signal for increased risk of developing these disorders: for example, it may be temporally antecedent to them. Future research may further address the role of body concealment and exposure, also exploring whether body concealment precedes the development of eating disorders. Regardless of the direction of this relation, the fact that body concealment is co-occurring with disordered eating and depression suggests that it can be used as an easily observable signal of psychological suffering, which specialists and practitioners should be mindful towards.

Overall, our results suggest that body concealment and body exposure are associated with different, yet problematic correlates, possibly suggesting that both strategies should be disincentivized and that a possible healthier strategy may lie in reducing the focus on the body and on how it appears to others.

4.2. Limitations and future research

Being the first investigation of body concealment and exposure within the sexual objectification framework, this work is not without limitations. First and foremost, our studies employed a correlational design. Based on theoretical reasoning, we argue here that body concealment and exposure are responses to self-objectification and subsequent to it. However, from an empirical perspective, we cannot fully confirm this assumption. Similarly, while the mediational models we tested are theory grounded, causality cannot be inferred and needs stringent empirical evidence to be assessed (see Stone-Romero & Rosopa, 2008). Alternative paths could be tested. While we conceive body concealment and exposure as responses to self-objectification, it is also plausible that engaging in body concealment and body exposure (e.g., as an outcome of social norms around clothing and self-presentation) may shift the focus from one's self to body and appearance, thus triggering self-objectification. Future experimental studies should further confirm the direction of this link and possibly demonstrate that the two components of self-objectification elicit different forms of strategic appearance management. This experimental effort could also serve an additional purpose. Overall, throughout this work we relied on trait-like variables; however, given that self-objectification can also be assessed as a state, the same may be true for body concealment and exposure. Therefore, experimental studies may also investigate whether the patterns identified here replicate at the contextual level. For example, there may be contexts that promote body exposure and others that promote body concealing.

Following the same line of reasoning, one possibility we did not explore here is that a negative body image may moderate, rather than mediate, the link between self-objectification and body concealment/exposure. Some exploratory analyses that combined data from studies 1–4 (see supplementary materials) suggest that indeed, women high in

chronic self-objectification tend to manifest body concealment when body shame is high, and body exposure when body shame is low. However, while body shame does not moderate the link between self-objectification and body concealment, these analyses also point to the fact that a negative body image may moderate the link between self-objectification and body exposure: the effect of observer perspective on body exposure may be weaker the higher the body shame. Further research is needed to better define the role played by negative body image in determining body concealment and body exposure.

Moving on to a measurement standpoint, the poor CFA fit indices of some measures (i.e., OBCS-S, SOQ Likert, EAT, MAIA) included in the studies is also a concern. This might be explained by several reasons: for example, items that may not adequately reflect contemporary attitudes and beliefs, potential issues with the psychometric properties of the original versions (e.g., for the OBCS, existing validations drop some items due to low factor loadings; see Moradi & Varnes, 2017; Sicilia et al., 2020), or to the fact that (although unlikely) the translation process may have affected the structure of the scales. Thus, we suggest interpreting with caution the pattern of relations involving these measures. We also hope that future research in the area of sexual objectification will be mindful of the structural validity of scales, which is often overlooked. Relative to chronic self-objectification, the SOBBS (Lindner & Tantleff-Dunn, 2017) emerged as the most reliable measure, allowing to discriminate two different aspects of the constructs in a theoretically sound and reliable way. Thus, we encourage its use in future research interested in assessing chronic self-objectification.

As an additional point, literature on self-objectification is vast and encompassess a wide range of mechanisms, outcomes, and correlates (see Roberts et al., 2018 and Ward et al., 2023 for reviews). As a starting point, we focused on the model tested by Calogero et al. (2021), which builds on the original Fredrickson and Roberts' theory (1997). Nevertheless, future studies could test whether body concealment and exposure are related to other health variables, such as greater motivation to drink as a coping strategy (Baildon et al., 2021).

Moreover, it may be relevant to explore body concealment and body exposure in relation to Gervais et al.(2020)'s social interaction model of objectification (2020), which focuses on objectifying interactions between men and women and identifies the factors that influence when such interactions are initiated, avoided, sustained, or ended. This model could provide insights into how contextual factors – such as whether a sexual goal is activated – influence exposing or concealing the body. Furthermore, elaborating on the regulatory focus literature (Higgins, 2012) or the approach/avoidance literature (Elliot, 2006), body concealment may be conceived as an avoidance-oriented response, whereas body exposure may be conceived as an approach-oriented response. As previously argued, body concealment should be motivated by the avoidance of the other's gaze, and, as such, may emerge under threat of sexual objectification. Body exposure, instead, may be strategically used to seek social rewards by complying with the objectified standard: this is supported by the fact that, differently from self-objectification, body exposure is not associated with well-being.

Lastly, the generalizability of the present findings is limited, as they are based on samples of adult women, generally middle class and politically left-leaning, from two specific cultural backgrounds (Italy and the UK). Future research could explore body concealment and exposure in different countries (where social norms around clothing may be different), among more diverse samples, or among both female and male pre-teens and teenagers, who experience both developmental body changes and identity shifts, which might exacerbate their appearance management strategies.

4.3. Conclusion

The present research shed light on body concealment as a crucial dimension within the sexual objectification framework, whose distinction from exposure has important practical implications for the wellbeing of women and girls. We also provide robust evidence for a psychometrically validated scale to measure body concealment and exposure in future research, and support for an expanded sexual objectification framework that views exposure and concealment as distinct motivated strategies women might enact in response to self-objectification.

Footnotes

[1] Due to technical error, the concealment measure also included 7 items that were excluded in Study 1 (i.e., item 2, item 12, item 23, item 24, item 25, item 26, item 27).

[2] In this study, we assessed body shame on a scale from 1 – *Never* to 5 – *Always*, in line with the original scale.

[3] We also conducted the same analysis using the appearance anxiety measure in place of the body shame measure, hypothesizing a similar pattern of results due to the substantial overlap between the two constructs. As anticipated, the results followed a consistent pattern, with the effect sizes even larger than those observed in the model using the body shame measure. However, most fit indices did not meet the recommended thresholds, with the exception of RMSEA, which remained within acceptable limits (see Supplementary Materials for detailed results).

[4] Even though we included age ≤ 45 as a selection criterion on Prolific, five participants (0.01 % of the sample) were over 45. Given the small number, we elected to retain these participants

Author Note

Materials, data, and code for all studies are available at: https://osf.io/ahpqr. Study 4 was pre-registered at: https://aspredicted.org/MC9_X9C. Study 5 was pre-registered at: https://aspredicted.org/T6Z_2Q2. This research was funded by the Seedcorn Grant of the European Association of Social Psychology. The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this article.

Ethical Statement

Studies 1 and 2 were approved by the Ethical Committee for Psychological Research of the University of Padova (protocol number: 5285). Studies 4 and 5 were approved by the Ethical Committee of the University of Campania "Luigi Vanvitelli" (protocol number: 29/2023).

CRediT authorship contribution statement

Daniela Ruzzante: Writing – review & editing, Writing – original draft, Validation, Methodology, Funding acquisition, Conceptualization. **Magdalena Formanowicz:** Writing – review & editing, Validation, Methodology, Funding acquisition, Conceptualization. **Silvia Galdi:** Writing – review & editing, Validation, Resources, Methodology, Investigation, Funding acquisition, Conceptualization. **Caterina Suitner:** Writing – review & editing, Supervision, Project administration, Methodology, Funding acquisition, Conceptualization. **Francesca Guizzo:** Writing – review & editing, Validation, Methodology, Funding acquisition, Conceptualization. **Michela Vezzoli:** Writing – review & editing, Writing – original draft, Validation, Methodology, Formal analysis, Data curation, Conceptualization. **Carmen Cervone:** Writing – review & editing, Writing – original draft, Visualization, Validation, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

Declaration of Competing Interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

Carmen Cervone reports financial support was provided by European Association of Social Psychology. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Materials, data, and code for all studies are available on the Open Science Framework (OSF) at the following link: https://osf.io/ahpqr.

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