



Vulnerability to appearance-based social media use and preoccupation: A model of young women's appearance values, depression, and self-esteem via uses and gratification

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ARTICLE INFO

Keywords:

Social media use
Appearance-based social media use
Body image
Antecedents
Individual vulnerability factors

ABSTRACT

Theory and research suggest that women's general affective and appearance-related vulnerabilities are precursors of social media use, with the associations mediated by gratifications sought from social media, such as affection-seeking. To test this, we examined whether the vulnerabilities of low self-esteem, depression, thin-ideal internalisation, appearance perfectionism and appearance-contingent self-worth had indirect associations with appearance-based social media use/preoccupation via social media gratifications of escape, socialising, and affection-seeking. Social media use/preoccupation included general appearance-related activity, self-presentation, and social comparison when online. Participants were 405 young women ($M_{\text{age}} = 19.95$, $SD = 2.70$) who completed surveys. In a path model, all vulnerabilities but depressive symptoms were related to more escape and/or socialising gratification and there were three small indirect associations with appearance-based social media use/preoccupation, two for self-esteem (via escape and socialising) and one for thin-ideal internalisation (via socialising). In addition, the three appearance-specific individual vulnerability factors were directly related to appearance-based social media use/preoccupation. Overall, appearance-related vulnerabilities had mostly direct relations with increased appearance-based social media use/preoccupation. In contrast, self-esteem had indirect associations with appearance-based social media use/preoccupation, which were sometimes counterintuitive, and depressive symptoms had little unique impact on gratifications or on appearance-based social media use/preoccupation once other vulnerabilities had been considered.

1. Introduction

Over the last two decades, rapid technological growth has shifted people's media consumption from traditional sources (e.g., magazines and newspapers) to internet-mediated communication. Social media has become a growing cultural phenomenon, with 79.9 % of Australian adults reporting having an active social media account, with the majority of users being young adults (aged 18–34 years of age; Kemp, 2021). Social media platforms such as Facebook, Instagram, TikTok, and Snapchat permit users to observe, share, and connect with people and

their experiences. Although these platforms share some basic features, such as creating an individualised profile and fostering social connectivity, differences in text-to-visual ratios tend to attract different demographics (Auxier & Anderson, 2021). For instance, predominantly image and video-based platforms (i.e., Instagram, TikTok, and Snapchat) tend to attract a younger demographic, while platforms that are predominantly text-based (i.e., Reddit, X [formally Twitter] and LinkedIn) appeal to an older demographic (Auxier & Anderson, 2021).

Social media offers consumers many benefits, such as increased social connectedness and mass dissemination of information (Popat &

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<https://doi.org/10.1016/j.bodyim.2026.102034>

Received 20 March 2025; Received in revised form 12 January 2026; Accepted 20 January 2026

Available online 31 January 2026

1740-1445/© 2026 Published by Elsevier Ltd.

Tarrant, 2023). However, there is also a downside of social media use. For example, there is now convincing evidence that heightened levels of appearance-based social media use, such as interacting with appearance-related information and influencer content or spending more time curating an ideal physical appearance, are risks for (or at least correlates of) appearance and body dissatisfaction in women (Holland & Tiggemann, 2016; Rodgers et al., 2016; Saiphoo & Vahedi, 2019; Tyłka et al., 2023). Given that women under the age of 30 are more likely to access image-based platforms such as Instagram and TikTok (Pew Research Center, 2024), this research has often focused on young women. A prominent concern has been the great deal of unavoidable appearance messages on social media, like its more traditional media counterparts. These messages infiltrate young women's social media feeds and convey idealised body images of women and emphasise beauty, dieting, and exercise trends that are very often not achievable or healthy for all women (Tiggemann, Anderberg & Brown, 2020). However, unlike traditional media, social media allow an endless, constant, ever-updating stream of meticulously edited images and beauty-related information that creates a false sense of normalcy and desirability, resulting in feelings of inadequacy among users, especially women (Tiggemann & Anderberg, 2020). The constant contact with and comparison to celebrities, influencers, and others who appear to have ideal or desirable bodies can influence many women to feel they do not have or cannot achieve appearance and body ideals (Fardouly & Vartanian, 2016). These messages extend beyond passive consumption and are actively perpetuated when social media users post images or comment on the content of women who appear to embody the ideal physique, potentially reinforcing feelings of inadequacy. Such engagement may inadvertently reinforce appearance-related messages for observers who passively view the content. Indeed, research has shown that more appearance-based social media consumption strongly co-occurs with and increases women's body and facial dissatisfaction (Tiggemann, Anderberg & Brown, 2020), thin-ideal internalisation and drive for thinness (Cohen et al., 2018), body surveillance (Feltman & Szymanski, 2018; Lamp et al., 2019), disordered eating and compulsive exercise (Holland & Tiggemann, 2017), and negative affect (Rodgers et al., 2016; Zimmer-Gembeck et al., 2023).

Given the numerous deleterious consequences of appearance-based social media use, understanding the beliefs and personal values that may increase women's preoccupation with appearance-related online content has become a priority to guide prevention and intervention in schools and other settings. To date, a number of factors have been identified as risk factors amenable to intervention, including heightened self-objectification, body shame, thin-ideal internalisation, and perfectionism (Gioia et al., 2020; Mustafa et al., 2022; Sharma & Gupta, 2021; Vandenbosch & Eggermont, 2016; Veldhuis et al., 2020). Drawing on such research, Perloff (2014) put forward a model identifying the antecedents of women's social media use and appearance-related activities when online (see Fig. 1). Although research in this area has proliferated, this model has not yet been tested.

The aim of this study was to test the portion of Perloff's model dedicated to identifying the general affective factors that could induce women's vulnerability to appearance-based social media use and preoccupation (see Fig. 2). As illustrated in Fig. 2, the model of appearance-related social media use/preoccupation tested in this study align with Perloff's model by including two general vulnerabilities of low self-esteem and depression, and three appearance-related vulnerabilities of thin-ideal internalisation, appearance perfectionism, and appearance contingent self-worth. These vulnerability factors were expected to explain the gratifications sought from social media, focusing specifically on the gratifications proposed in uses and gratification theory (Katz et al., 1973; Phua et al., 2017). Thus, five vulnerabilities are proposed as drivers of seeking gratifications for validation and reassurance, with these gratifications, in turn, explanations for elevated appearance-related social media use/preoccupation.

1.1. General vulnerabilities: Low self-esteem and depressive symptoms

Perloff (2014) described the process that links individual general affective and appearance-specific vulnerabilities to increased needs for seeking affirmation of the worth of the self, particularly by seeking out external validation and reassurance. While the specific pathways of the antecedent portion of Perloff's model have not been tested in their entirety, there is some empirical support for the various links proposed. In particular, low self-esteem and depressed affect have been identified as general affective vulnerabilities as they covary positively with each other (Sowislo & Orth, 2013). Interpersonal models of depression further suggest that individuals with lower self-worth may be more motivated to seek external validation as a regulatory strategy, engaging in behaviours such as reassurance seeking to compensate for perceived inadequacy (Joiner et al., 1999; Starr & Davila, 2008). Although such strategies may offer momentary relief, they can paradoxically elicit interpersonal rejection, reinforcing feelings of worthlessness and sustaining depressive affect (Katsuya, 2007; Joiner et al., 1999). Moreover, given the widespread use and current ease of accessing social media, young women may be likely to turn to this as a source of validation and reassurance. Such use would be expected to often involve appearance content, given the targeting of this content to women and that young women are vulnerable to content that perpetuates societal beauty standards; many young women place a great deal of importance on their appearance (Feltman & Szymanski, 2018). This use, in turn, would make it more likely young women will engage in upward social comparisons on social media, compulsively view reactions to their photos, and engage in other appearance-related online activity as a way to increase self-esteem and reduce depression through validation. However, as described by Perloff, this is often not a good source of validation, resulting in invalidation, even lower self-esteem and more depressive symptoms, and poorer body image.

Regarding self-esteem specifically, studies to date continue to question the association of self-esteem with social media use generally and

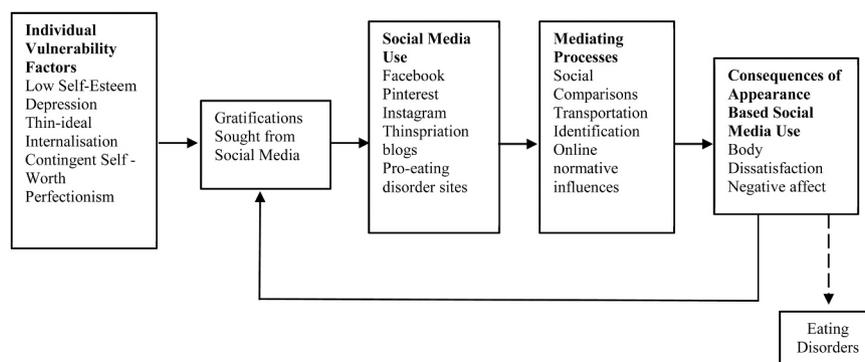


Fig. 1. Transactional model of social media use and body image concerns (Perloff, 2014).

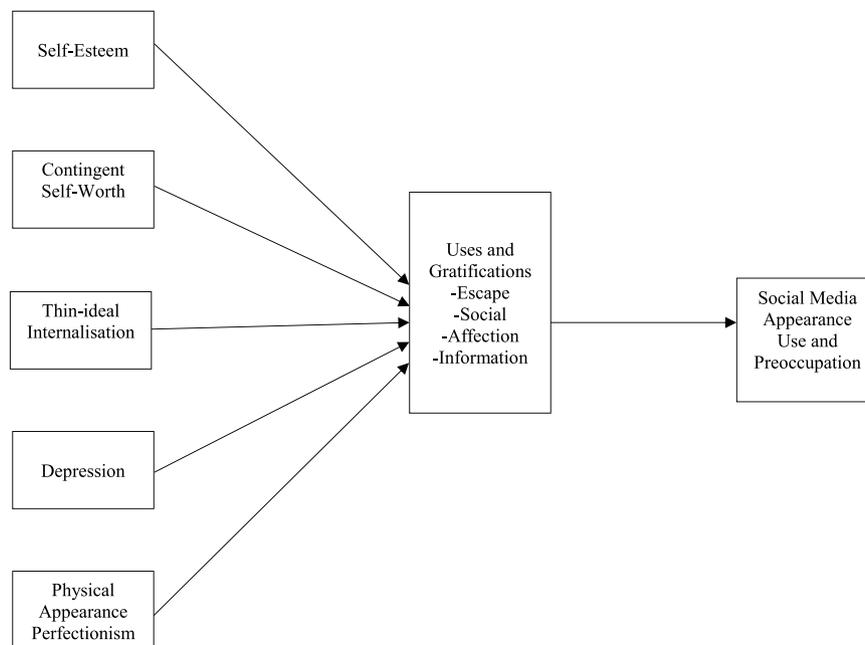


Fig. 2. Pathways to appearance based social media use and preoccupation Reconceptualised from Perloff's (2014) hypothesised model.

the few studies focused on general self-esteem and appearance-related social media use and preoccupation have produced a mix of findings. In particular, meta-analyses have revealed a small, negative, and significant relationship between self-esteem and social media use, whereby poorer self-esteem is associated with greater social media use (Saiphoo et al., 2020). Yet, some studies of self-esteem and appearance-based social media use have reported the expected negative association (e.g., Mischner et al., 2013), but others have found no significant association (e.g., Derek et al., 2022). Furthermore, although not directly referred to as 'gratifications from social media', research conducted by Rodgers et al. (2021) with an adolescent sample found a significant negative relationship between self-esteem and motivations to use social media in order to connect socially, increase popularity, and for reasons related to appearance. Thus, it is unclear in the literature whether seeking gratification, such as reassurance and validation of worth, via social media does mediate associations of self-esteem with appearance-related social media use and preoccupation.

With respect to the vulnerability of depressive symptoms, cross-sectional (Hawes et al., 2020; Zimmer-Gembeck et al., 2021) and longitudinal research studies (Maheux et al., 2022; Zimmer-Gembeck et al., 2023) have been consistent in finding that greater depressive symptomatology is related to greater appearance-based social media use/preoccupation in adolescents and young adults. For instance, Hawes et al. (2020) found that young adults' appearance-related social media use/preoccupation was more strongly correlated to depressive symptoms as compared to general social media preoccupation, emphasising the unique impact of appearance-related content. In a longitudinal study (Maheux et al., 2022), appearance-related social media consciousness, defined as a preoccupation with physical attractiveness in social media photos, predicted higher depressive symptoms one year later, even when controlling for the total time spent on social media. Similarly, Zimmer-Gembeck et al. (2021) found that preoccupation with appearance-based online activities, self-presentation, and online social comparison, was linked to increased depressive symptoms. These findings suggest that appearance-related social media use/preoccupation fosters self-evaluation against unattainable beauty standards, which may undermine self-worth and promote unrealistic expectations and distress. Although research on the associations between depressive symptoms, uses and gratifications, and appearance-related social media use/preoccupation remains limited, one study (van Oosten et al., 2023)

has found that depressive symptoms did not predict motivations to seek appearance-related self-validation or preferences for visually oriented social media platforms. Perhaps these findings align with depressive symptomatology, where a person's tendency is to withdraw rather than put themselves in the 'spotlight'. However, it is unknown if depressive symptoms serve as a vulnerability factor that motivates individuals to seek gratifications of escape, socialisation, and affection, through online platforms, resulting in appearance-related social media use and preoccupation.

1.2. Appearance-related vulnerabilities

The final three vulnerabilities of interest in this study were related to appearance and body image. These vulnerabilities were also identified by Perloff (2014) and include thin-ideal internalisation, appearance perfectionism, and appearance contingent self-worth. Thin-ideal internalisation refers to the process whereby girls and women adopt societal standards of a physique characterised by slenderness as the beauty ideal (Thompson et al., 2018). Other prominent sociocultural models, and in particular, the Tripartite Influence Model (Thompson, 1999), view social media as a sociocultural influence that leads women to become aware of and then internalise the thin-ideal. Although there is a great deal of support for this (Andres et al., 2024; Donovan et al., 2020; Huang et al., 2021; Kidd et al., 2024; Roberts et al., 2022; Saiphoo & Vahedi, 2019), Perloff (2014) emphasised the alternative pathway, whereby thin-ideal internalisation drives women to engage in increasingly more appearance-based social media use and preoccupation. Notably, this process could be bidirectional, with research suggesting that media use relates to more thin-ideal internalisation, which then links to greater body dissatisfaction (e.g., Jung et al., 2022), but others suggesting that internalisation could increase consumption of appearance-related media (Yao et al., 2024; Zeng et al., 2024; Zimmer-Gembeck et al., 2024). Moreover, the Tripartite Model was proposed well before social media was available, and unlike television and print media (which was front of mind in the original Tripartite Model), social media is even more available. It is also very visual and can be very interactive. Individuals not only consume it but can comment about it and contribute to it, making it qualitatively different to other sociocultural influences, including traditional media sources. Furthermore, some girls internalise the thin-ideal (through peers, family and traditional media, as the

original Tripartite Model suggests) before adolescence (Damiano et al., 2015; Sands & Wardle, 2003; Thompson et al., 1997) when most are introduced to social media through their first smartphone or tablet (Rideout et al., 2022). Thus, girls can be predisposed to seek appearance-based content on social media by the time they are able to access it in late childhood / early adolescence (Zimmer-Gembeck et al., 2023, 2025).

Appearance perfectionism and appearance-contingent self-worth are the final two vulnerabilities considered in this study. Each of these appearance values has also been associated with appearance-related social media use in a small handful of studies. For example, placing more value on physical appearance perfectionism has been associated with greater maladaptive social media use and more appearance-based social media use (Alidosti et al., 2022; Simon et al., 2022). In addition, in one study, elevated appearance contingent self-worth was related to increased frequency of sharing photos online (Stefanone et al., 2011), and, in other studies, receiving more appearance-related comments on photos was related to increased frequency of posting images of the self (Burnell et al., 2021) and engaging in more online appearance comparisons (Modica, 2019). It would seem that there is limited evidence to date investigating the mediating role of uses and gratifications on the three appearance-related vulnerabilities and appearance-related media use/preoccupation. This research fills this gap, making a novel contribution to the research literature in this respect.

1.3. Social media uses and gratifications

Uses and gratification theory (Blumler & Katz, 1974; Katz et al., 1973) guided the specific gratifications that could reveal indirect associations between general affective and appearance-related individual vulnerability factors and appearance-based social media use/preoccupation, while remaining aligned with the model proposed by Perloff (2014). Uses and gratification theory posits that people actively seek out media to satisfy four primary needs: a) for diversion or entertainment, serving as an escape from reality; (b) to foster relationships, encouraging emotional and interpersonal connections; (c) to develop a personal identity, by learning behaviours and values through media; and (d) to acquire information (Blumler & Katz, 1974; Katz et al., 1973). Accordingly, media use is shaped by individuals' unique interests, goals, values, motives, needs, and desired gratifications, which drive their media choices and patterns of engagement. A central assumption of uses and gratification theory is that social media users play an active role in contributing, selecting, and interpreting media content based on desired gratifications.

There has been limited research on the associations between individual vulnerabilities, uses and gratification related to media use, and appearance based social media use/preoccupation. Instead, existing studies have tended to concentrate on the relations of uses and gratifications with body image concerns and maladaptive social media use. For example, (Jarman et al., 2021) found that motivations identified in uses and gratifications theory – escaping and passing time, socialising, and sharing information – but also seeking appearance feedback, were associated with increased photo-based social media use and more intensive use of social media. Relatedly, Rodgers (2016) reported that motivations related to use of social media to gain social capital and appearance feedback predicted greater body dissatisfaction and reduced well-being. Furthermore, (Thorell et al., 2024) found that the most common social media use motives were to seek information, entertainment, and social maintenance (i.e., maintain existing social relationships). The present research adopts a novel perspective proposed by Perloff (2014) to examine whether young women with greater vulnerability factors are more likely to consume more appearance-related social media through specific online gratifications. Using an existing measure of uses and gratifications, four domains were considered: (1) escape measured as using social media to relax and escape daily stress; (2) socialising measured as engaging with others and sharing

experiences; (3) affection seeking measured as seeking emotional support and validation from peers; and (4) information seeking measured as accessing and sharing knowledge (Menon & Meghana, 2021; see Fig. 2). Notably, all these uses could be heightened in times of stress (e.g., escaping to alleviate distress from stressful events or seeking emotional support and information to share emotions or understand stressful events) and all can serve the purpose of seeking reassurance and validation.

1.4. The present study

The primary aim of this study was to test the portion of Perloff's (2014) model that points to general and appearance-related vulnerabilities for social media uses and gratifications, with these gratifications in turn expected to account for young women's increased appearance-based social media use/preoccupation (Fig. 2). Three hypotheses were tested:

H1. General affective (lower self-esteem, higher depression) and appearance-related vulnerabilities (greater thin-ideal internalisation, appearance contingent self-worth, and physical appearance perfectionism) will be significantly associated with more use of social media for escape, socialising, affection-seeking, and information-seeking (i.e., uses and gratifications from social media).

H2. More use of social media for escape, socialising, affection-seeking, and information-seeking will be significantly associated with greater appearance-based social media use/preoccupation.

H3. Associations of general affective and appearance-related vulnerabilities with appearance-based social media use/preoccupation will be significantly indirect via more use of social media for escape, socialising, affection-seeking, and information-seeking.

2. Method

2.1. Participants

Table 1 presents participant demographic information. Participants were 405 Australian women aged 17 – 33 years ($M = 19.95$, $SD = 2.70$), with BMIs ranging from 15.7 to 53.26 ($M = 23.17$, $SD = 4.54$; 93 % had a BMI less than 30). Most women were White (70 %), not married (70.90 %), and had completed Year 12 of secondary/high school (81 %). Of the participants, 8.6 % reported having a past eating disorder diagnosis, with anorexia nervosa (4.4 %) the most common diagnosis followed by bulimia nervosa (1.7 %). Participants reported spending an average of 4.83 h per day on social media for personal use ($SD = 2.32$, range 0.5–20 h), with about one-half using Snapchat (50.4 %), Instagram (49.1 %), and TikTok (47.2 %) five or more times per day. Facebook was less popular with 15.3 % using it five or more times a day.

2.2. Measures

2.2.1. Self-Esteem

Self-esteem was measured using the 10-item Rosenberg Self-Esteem Scale (RSE; Rosenberg, 2016). Respondents rated their level of agreement with each item (e.g., I take a positive attitude toward myself, I certainly feel useless at times) on a scale from 1 (*strongly disagree*) to 4 (*strongly agree*). After reverse-scoring five items with negative valence, summing responses produced a total score, with higher scores indicating greater self-esteem. Internal consistency of the RSE has been shown to be excellent (Cronbach's $\alpha = .91$; Sinclair et al., 2010). In the current study, the RSE had $\alpha = .90$.

2.2.2. Depressive symptoms

Depression was measured using the 7-item Depression subscale of the Depression Anxiety and Stress Scale – 21 item version (DASS-21; Lovibond & Lovibond, 1995). Respondents rated the degree to which each item in the past (e.g., I felt that life was meaningless) applies to

Table 1
General demographic information (N = 405).

Demographic Variable	n	%
Ethnicity		
Australian Caucasian	283	69.9
Australian Aboriginal; Torres Strait Islander	8	2.0
Self-Described Ethnicity	114	28.1
Relationship Status		
Single	287	70.9
Married or de facto	55	13.5
Divorced or separated	1	.2
Relationship Orientation Not Specified	62	15.3
Body Mass Index		
Below 18.5 (Underweight)	38	9.6
18.5–24.9 (Normal)	266	66.2
25.0–29.9 (Overweight)	71	17.5
30.0 or higher (Obese)	27	6.7
Average time spent on social media (per day)		
0–4hrs	200	49.3
5–8hrs	182	44.8
More than 9 hrs	23	5.7
Use of social media platforms (per day)		
Instagram		
Do not use the platform	11	2.7
About once a day	53	13.1
2–4 times a day	142	35.1
5 or more times a day	199	49.1
Facebook		
Do not use the platform	82	20.2
About once a day	146	36.0
2–4 times a day	115	28.4
5 or more times a day	62	15.3
Snapchat		
Do not use the platform	70	17.3
About once a day	54	13.3
2–4 times a day	77	19.0
5 or more times a day	204	50.4
TikTok		
Do not use the platform	78	19.3
About once a day	33	8.1
2–4 times a day	103	25.4
5 or more times a day	191	47.2

them on a scale from 0 (*did not apply to me at all*) to 3 (*applied to me very much or most of the time*). Scores were summed with higher scores indicating more depressive symptoms. The internal consistency for the Depression subscale has been found to be good ($\alpha = .85$; Osman et al., 2012). In the current study, the internal consistency of the Depression subscale of the DASS-21 was $\alpha = .91$.

2.2.3. Thin-ideal internalisation

Thin-ideal internalisation was measured using the 6-item idealisation subscale of the Thin-ideal Internalisation Questionnaire (Kidd et al., 2023). Respondents rated their agreement with each item (e.g., I aspire to have a thin body) on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Items are summed to obtain a total score, with higher scores indicating greater thin-ideal internalisation. Previously, the subscale has demonstrated excellent internal consistency ($\alpha = .91$; Kidd et al., 2023). In the current study, the internal consistency for the idealisation subscale was $\alpha = .95$.

2.2.4. Physical appearance perfectionism

Perfectionism pertaining to physical appearance was measured using the 12-item Physical Appearance Perfectionism Scale (PAPS; Yang & Stoeber, 2012). The PAPS is comprised of two subscales: 1) worry about imperfection (7-items; e.g., I worry that my appearance is not good enough) and 2) hope for perfection (5-items; e.g., I hope my body shape is perfect). Respondents rated their agreement on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). For the purposes of this study, the items on each subscale were summed and then the two subscale scores were summed to produce a total score, with higher scores reflecting greater

perfectionistic tendencies with respect to physical appearance. The reliability of the PAPS has been found to be excellent in previous research ($\alpha = .90$; Simon et al., 2022). In the current study, the internal consistency for all items was $\alpha = .91$. It has been recommended that the worry and hope subscales be examined separately (Yang & Stoeber, 2012). However, a total score was used in the present study, given that the subscales were moderately correlated with each other ($r = .41$, $p < .001$), and the correlation of the total score tended to be similar to the highest correlation for the two subscales with other measures (see Supplemental Table 1).

2.2.5. Appearance contingent self-worth

Appearance contingent self-worth was measured using the 5-item appearance subscale of the Contingencies of Self-Worth Scale (CSWS; Crocker et al., 2003). Respondents rated their agreement with each item (e.g., My sense of self-worth suffers whenever I do not look good) on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). After reverse-scoring several items, a total score is computed by averaging responses, with higher scores reflecting greater appearance contingent self-worth. Internal consistency for the appearance subscale has been found to be good ($\alpha = .83$; Crocker et al., 2003). In the current study, the CSWS was $\alpha = .78$.

2.2.6. Gratification sought from social media use

Gratification sought from social media was measured using a modified version of the Uses and Gratifications Scale originally designed to focus on Facebook (UGS; Menon & Meghana, 2021). The items of the original scale were modified to refer to social media more generally. For example, the item I use Facebook to procrastinate was changed to I use Social Media to procrastinate. The UGS is comprised of four subscales: 1) escape (8 items; e.g., I use Social Media to escape from reality), 2) socialising (8 items; e.g., I use Social Media to connect with family and friends), 3) affection seeking (4 items; e.g., I use Social Media to receive appreciation or social validation), and 4) information seeking (2 items; e.g., I use Social Media to seek new information and keep myself updated with news). For the purposes of this study, the four separate subscales (rather than an overall score) were used to provide a finer grained examination of the particular gratifications that are important to appearance-based social media use, and their specific mediational roles within the model. Respondents rated their agreement with each item on a scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Scores on each subscale are summed to produce total subscale scores, with higher scores reflect greater gratification sought from social media. The Cronbach's α for the escape, socialising, affection seeking, and information seeking subscales have been demonstrated to be .73 or higher in previous research (Menon & Meghana, 2021). In the current study, the Cronbach α were .85, .74, .71, and .51, respectively. Given the low alpha, information-seeking was not analysed in this study, leaving escape, socialising, and affection-seeking.

2.2.7. Social media use/preoccupation

Social media use/preoccupation was measured using the 18-item Social Media Appearance Preoccupation Scale (SMAPS; Zimmer-Gembeck et al., 2021). The SMAPS is comprised of three subscales: appearance comparisons, online self-presentation, and online appearance-related activity, which can be used as individual subscales or summed to create a total score (Zimmer-Gembeck, 2025). For the purposes of the present study, the total score was used. Respondents rated their level of agreement with each item (e.g., When on social media, my friends post, comment on, share or like content about what they would like their bodies to look like) on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Items were averaged, with higher scores indicating more social media appearance-related use/preoccupation. Previous research has reported a Cronbach's $\alpha = .92$ or higher (e.g., Zimmer-Gembeck et al., 2024). In the current study $\alpha = .89$.

2.3. Procedure

Ethical clearance was granted through XXX [Blinded] University’s Human Research Ethics Committee (Ref No: 2022/517). Almost all participants (97 %) were recruited through an online research participant pool open to undergraduate students enrolled in first year psychology courses who received course credit for participation. The other 3 % of participants were recruited via social networking (i.e., Facebook and Instagram). Data were collected via an online survey between April and November 2022. Female students were directed to an online participant information sheet and consent form and then directed to the online survey. As an incentive for participants who were not students (3 % of the participants) and who were recruited through social networking, an invitation to enter a draw to win a \$50 gift card was extended. To ensure anonymity and confidentiality of responses, participants were directed to a separate link where they provided contact information in order to gain course credit (first year students) or incentives (those recruited through social networking).

2.4. Data analytic strategy

Prior to conducting the primary analyses, skew and kurtosis were investigated and data were scrutinised for univariate outliers including by visual inspection of boxplots and histograms. Multivariate outliers were identified using Mahalanobis distance with a critical cut-off of 29.59. Path analysis was conducted to examine the proposed model using AMOS 29 statistical software, employing maximum likelihood estimation with the covariance matrix (Arbuckle, 2022). Model fit was assessed using the normed chi-square (χ^2/df) goodness-of-fit index statistic rather than the simple chi-square (χ^2) goodness-of-fit index statistic, because the χ^2 is sensitive to sample size and often indicates poor model fit with a large sample. Additionally, the comparative fit index (CFI), the root mean squared error of approximation (RMSEA), and the Standardised Root Mean Square (SRMR) were used to assess model fit. For an acceptable fit, the CFI should be > .90, the RMSEA should be < .06, the SRMS should be < .08 (Hu & Bentler, 1999), and the normed χ^2 should fall between 1 and 3 (Kline, 2005). Indirect associations with 95 % confidence intervals were estimated using bootstrapping (5000 samples).

3. Results

3.1. Data management

Of the 615 individuals who clicked on the study link to read the inclusion criteria, 210 were eliminated due to not finishing the survey, and not meeting the criteria. The scores for the remaining 405 women were checked for skew and kurtosis, and to identify impossible or

implausible scores and multivariate outliers. Moderate negative skew was evident for gratifications (escape) and appearance contingent self-worth. Depression had moderate positive skew. Accordingly, the Bollen-Strine bootstrap was calculated for the chi-square test to correct for inflated standard errors due to skew (Bollen & Stine, 1992). No significant outliers with high influence on the results were identified.

3.2. Correlations and descriptive statistics

As shown in Table 2, the general affective and appearance-related vulnerability measures, as well as the gratifications were all significantly correlated with appearance-related social media use/preoccupation, with self-esteem associated with less but all other measures associated with more appearance-related social media use/preoccupation. Four of the general affective and appearance-related vulnerabilities were associated with escape gratification: higher self-esteem was associated with less escape, whereas higher depressive symptoms, higher thin-ideal internalisation, and higher appearance contingent self-worth were associated with more escape. Socialising gratification had an unanticipated positive association with self-esteem and was also positively associated with physical appearance perfectionism. Affection gratification was associated with more depressive symptoms, thin-ideal internalisation, and appearance contingent self-worth. In addition, correlations of age and body mass index (BMI) with all measures are shown, with BMI associated with lower self-esteem, and higher depressive symptoms, thin-ideal internalisation, appearance-related perfectionism, and appearance-related social media use/preoccupation. Age was only significantly associated with higher BMI.

3.3. Model results

Path analysis was conducted to test the initial hypothesised model. As summarised in Table 3, the normed chi-square and the other fit indices suggested that this hypothesised model (Model 1) had a poor fit with the data, $\chi^2 = 241.17, p < .001; \chi^2 /df = 48.23; CFI = .83; RMSEA = .34; SRMR = .14$. To identify plausible direct paths that would substantially improve model fit, modification indices were consulted, and suggested paths were freed sequentially. This approach was used until there were no further statistically or theoretically justified paths to free. Using this approach, three additional models were tested, whereby paths from each of the appearance-related vulnerabilities to social media use/preoccupation were freed sequentially: Model 2 freed the path from thin-ideal internalisation, Model 3 also freed the path from appearance contingent self-worth, and Model 4 freed the path from appearance perfectionism. The fit of the models as additional paths were freed are reported in Table 3 and fits were compared to the fit of the hypothesised model and subsequent models. As evident from Table 3, Model 4 had acceptable fit to the data.

Table 2
Intercorrelations and descriptive statistics (N = 405).

Measures	M (SD)	1	2	3	4	5	6	7	8	9	10	11
1. Self-Esteem	26.17 (5.33)	–										
2. Depressive Symptoms	7.56 (5.34)	-.67***	–									
3. Thin-ideal Internal	19.94 (6.74)	-.48***	.41***	–								
4. App Perfectionism	41.20 (8.37)	-.63***	.48***	.64***	–							
5. App Self-Worth	5.26 (0.93)	-.41***	.32***	.48***	.64***	–						
6. U&G (Escape)	31.62 (5.02)	-.27***	.25***	.25***	-.06	.36***	–					
7. U&G (Socialising)	27.09 (4.89)	.13**	-.06	.08	.36***	.03	.21***	–				
8. U&G (Affection)	10.76 (3.25)	-.04	.10*	.12*	.04	.10*	.24***	.52***	–			
9. SM App Use/Preocc	4.35 (1.00)	-.37**	.31***	.62**	.62***	.51***	.31**	.23***	.27***	–		
10. BMI	23.17 (4.54)	-.21***	.17***	.32***	.20***	.02	.00	.05	.02	.12**	–	
11. Age	19.95 (2.70)	-.01	-.06	-.06	-.09	-.04	-.09	.00	.02	-.04	.19***	–

Note. Internal: Internalisation. App: Appearance. U&G: Uses and Gratifications. SM: Social media. Preocc: Preoccupation. The information-seeking subscale of uses and gratification was not analysed given a Cronbach’s $\alpha < .60$. However, information-seeking was not significantly associated with vulnerabilities or with SM appearance use /preoccupation.

*p < .05. **p < .01. ***p < .001.

Table 3
Nested models of transactional model of social media and body image concerns (N = 405).

	χ^2	df	χ^2 (df) difference	Normed χ^2 (χ^2/df)	TLI	CFI	RMSEA	SRMR
Model 1: Hypothesised model	241.17, $p < .001$	5	–	48.23	.20	.83	.34	.14
Model 2: Path from thin-ideal internalisation to SM Appearance Use/Preoccupation	63.24, $p < .001$	4	177.93 (1), $p < .001$	15.81	.63	.96	.19	.04
Model 3: Path from contingent self-worth to SM Appearance Use/Preoccupation	27.54, $p < .001$	3	35.70 (1), $p < .001$	9.18	.79	.98	.14	.02
Model 4: Path from appearance perfectionism to SM Appearance Use/Preoccupation	1.38, $p = .503$	2	26.16 (1), $p < .001$	0.69	1.01	1.00	.00	.01

Note. SM: Social media Scale. TLI = Tucker-Lewis Index, CFI= Comparative Fit Index, RMSEA = Root Mean Square Error of Approximation, SRMR= Standardised Root Mean Square.

Table 4
Indirect associations of vulnerability factors with appearance-based social media use/preoccupation via uses and gratifications (N = 405).

Indirect Path	Estimate, B	B 95 % CI	p-value
Self-Esteem → Escape → SM Appearance Use/Preoccupation	.00	[-.002,.001]	.844
Depression → Escape → SM Appearance Use/Preoccupation	.00	[-.001,.003]	.395
Thin-ideal → Escape → SM Appearance Use/Preoccupation	.00	[-.001,.001]	.853
Physical Appearance Perfectionism → Escape → SM Appearance Use/Preoccupation	.00	[-.001,.002]	.518
Appearance Contingent Self-Worth → Escape → SM Appearance Use/Preoccupation	.004	[-.011,.024]	.545
Self-Esteem → Socialising → SM Appearance Use/Preoccupation	.006**	[.001,.017]	.009
Depression → Socialising → SM Appearance Use/Preoccupation	.00	[-.002,.005]	.525
Thin-ideal → Socialising → SM Appearance Use/Preoccupation	.002*	[.000,.007]	.019
Physical Appearance Perfectionism → Socialising → SM Appearance Use/Preoccupation	.002	[.000,.006]	.136
Appearance Contingent Self-Worth → Socialising → SM Appearance Use/Preoccupation	-.001	[-.019,.016]	.948
Self-Esteem → Affection → SM Appearance Use/Preoccupation	.003*	[.000,.009]	.018
Depression → Affection → SM Appearance Use/Preoccupation	.002	[.000,.006]	.106
Thin-ideal → Affection → SM Appearance Use/Preoccupation	.001	[-.001,.005]	.359
Physical Appearance Perfectionism → Affection → SM Appearance Use/Preoccupation	.002	[-.001,.005]	.126
Appearance Contingent Self-Worth → Affection → SM Appearance Use/Preoccupation	.004	[-.009,.031]	.523

Note. SM: Social media Scale. CI = confidence interval. * $p < .05$. ** $p < .01$.

As shown in the illustration of the Model 4 results in Fig. 3, the general affective and appearance-related vulnerabilities were inconsistently associated with the two of the three uses and gratifications. Appearance perfectionism and appearance contingent self-worth had significant direct associations with escape. Self-esteem and thin-ideal internalisation had significant direct associations with the gratification socialising. In addition to the direct associations of all appearance-related vulnerabilities with more social media use/preoccupation, socialising and affection had a significant positive direct effect on more social media use/preoccupation. The model accounted for 16.6 % of the variance in escape, 5.2 % of the variance in socialising, 2.9 % of the variance in affection, and 52.7 % of the variance in appearance-based social media use/preoccupation.

Estimates of the indirect associations revealed three small but significant associations involving vulnerabilities with appearance-based social media use/preoccupation; two for self-esteem (via socialising and affection gratifications) and one for thin-ideal internalisation (via socialising). All indirect associations were positive indicating that higher self-esteem and thin-ideal internalisation were related to more appearance-based social media use/preoccupation via uses and gratification of socialising and affection for self-esteem and via socialising for thin-ideal internalisation.

4. Discussion

This study tested hypotheses that aligned with the antecedent portion of Perloff's (2014) model, examining whether general and appearance-related vulnerabilities were associated with young women's appearance-related social media use and preoccupation, indirectly via the uses and gratifications sought from social media. This proposed model resulted in a poor fit to the data. The final model, which involved adding direct paths from general affective and appearance-specific vulnerabilities to social media use/preoccupation, had a good fit with the data. Below we detail the specific findings.

4.1. Appearance-related vulnerabilities

Our findings support past research that has identified thin-ideal internalisation, physical appearance perfectionism, and appearance-contingent self-worth as vulnerabilities that directly relate to an increase in appearance-related activities, self-presentational concerns and social comparison to other's appearance in online spaces (Alidosti et al., 2022; Burnell et al., 2021; Stefanone et al., 2011; Zimmer-Gembeck et al., 2024). Although these direct associations were not explicitly identified in Perloff's (2014) proposed model (or hypothesised), they were implied and have been supported in this past research. For example, research on thin-ideal internalisation has found associations with increased exposure to appearance-related content, engagement in photo-related activities online, and following of appearance-focused online accounts (Cohen et al., 2017; McLean et al., 2015; Mingoia et al., 2017; Lee & Lee, 2021; Yao et al., 2024; Zeng et al., 2024). Thus, direct associations should be a part of the theory and model testing in the future.

The appearance-related vulnerabilities were also associated with social media uses and gratification of escape and socialising, partially supporting H1. Additionally, thin-ideal internalisation was associated with more socialising, and appearance perfectionism and appearance contingent self-worth were associated with more escape, also partially supporting H1. Further, in support of H3, we found one indirect association of thin-ideal internalisation with appearance-based social media use/preoccupation, via socialising gratification, that was consistent with Perloff's (2014) model. The significant indirect association indicates an association between young women's increased internalisation of the thin-ideal, increased motivation to seek social connections online, and

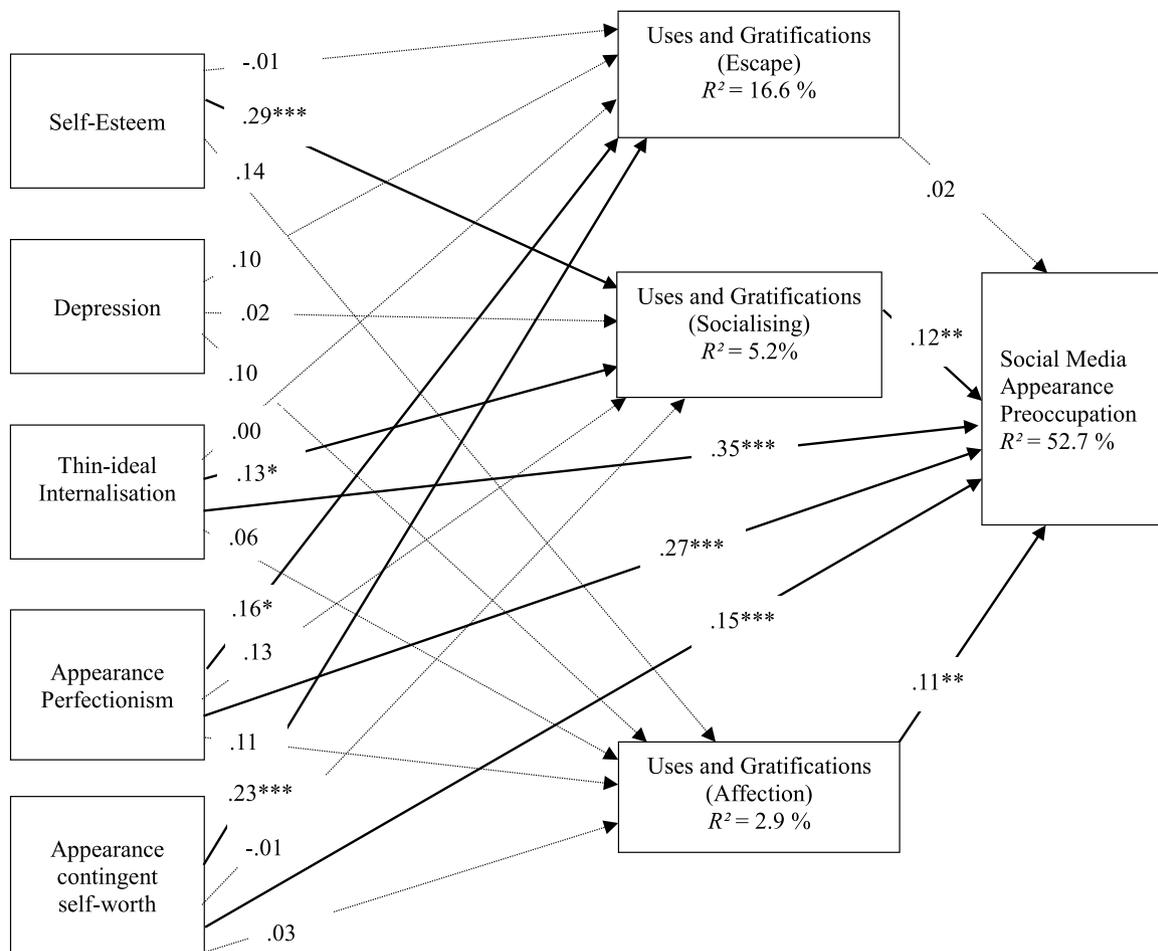


Fig. 3. Final path model of vulnerabilities, social media uses and gratifications, and social media appearance use/preoccupation (N = 405). Note. See Table 3 for fit indices (Model 4). Correlations between the vulnerabilities and between the uses and gratifications were freed, but the results are not shown here. Bolder lines highlight significant associations. * $p < .05$. ** $p < .01$. *** $p < .001$.

greater engagement in appearance-based social media use/preoccupation.

Together, these results raise the possibility that appearance-related vulnerabilities can spark greater use of social media to socialise and escape at the same time, as vulnerabilities directly and/or indirectly relate to more appearance-related preoccupation when online. This suggests that individuals who strive for a more perfect appearance or base more of their self-worth on their appearance may indeed be more inclined to use social media to escape (e.g., by engaging with non-appearance-related content, such as dog reels or travel videos). Escape involves withdrawing from sources of personal pressure (Orazi et al., 2023), which contrasts with the self-presentational demands of appearance-based social media use, where the objective is to “showcase one’s best self”. However, while seeking to gratify a need to escape in an online environment, individuals higher in appearance-related vulnerability may also have a greater need for socialising.

The finding that gratifications from using social media to socialise were positively associated with thin-ideal internalisation and greater appearance-based social media use/preoccupation is noteworthy and somewhat counterintuitive, given that social connection is typically conceptualised as an adaptive or protective form of engagement. The results suggest that appearance-related preoccupation may arise even in seemingly positive or socially motivated use. For example, seeking connection in online spaces may inadvertently expose individuals to the harms of appearance-based social media content, even when the initial motivation is social rather than appearance-focused. Online social connections may facilitate the exchange of shared interests and values,

thereby reinforcing engagement with appearance-based social media content and related preoccupations. From an intervention and prevention perspective, these findings indicate that targeting appearance-based harms cannot rely solely on reducing maladaptive or compensatory motives such as escape or reassurance seeking. Interventions may also need to address how positive social motives intersect with appearance pressures in digital environments. Approaches that build literacy around appearance norms in online networks, promote critical awareness of validation-seeking behaviours, or encourage non-appearance-based forms of connection may be beneficial.

Regarding the other two appearance-related vulnerabilities of physical appearance perfectionism and appearance-contingent self-worth, no indirect associations were supported. This did not support H3. Thus, perfectionism and appearance-contingent self-worth had significant direct, but not indirect, associations with more elevated appearance-based social media use/preoccupation. These findings support past research identifying striving for the perfect appearance as a risk for elevated behaviours related to appearance-based social media use/preoccupation research (Alidosti et al., 2022; Simon et al., 2022) and positive associations between appearance contingent self-worth and greater preoccupation with photo-related activities online, make online appearance comparisons, share photos more intensely, and continually monitor their bodies to adhere to societal beauty norms (Modica, 2019; Stefanone et al., 2011).

4.2. General vulnerabilities: Low self-esteem and depressive symptoms

In relation to the results for self-esteem and depressive symptoms, the zero-order correlations show that women lower in self-esteem and higher in depressive symptoms report more appearance-based social media use/preoccupation. Yet, in the path models that considered all vulnerabilities simultaneously, there was little evidence of unique direct associations of self-esteem or depressive symptoms with appearance-based social media use/preoccupation. Instead, as described above, it was the appearance-related vulnerabilities that were most relevant. However, supporting H3, self-esteem had significant indirect associations with appearance-based social media use/preoccupation via the gratifications of socialising and affection, but these indirect associations were positive, rather than negative. Young women who endorsed higher self-esteem reported more use of social media to socialise and seek affection, which in turn was linked with more appearance-based social media use/preoccupation. These results support the 'rich get richer' hypothesis, indicating that individuals with high self-esteem are more likely to leverage social media as a tool to enhance their social connections (Kraut et al., 2002; Valkenburg & Peter, 2011; Saiphoo et al., 2020). It would seem that accessing social media for affection, validation, and socialising could also be a risk for increasing appearance-based social media use/preoccupation, as individuals attract attention and gain immediate positive feedback through likes, comments, and shares related to visual content.

Although depressive symptoms and appearance-based social media use/preoccupation had a significant positive zero-order correlation, contrary to our predictions when testing the path model that simultaneously considered other vulnerabilities, depression was not found to relate to appearance-based social media use either directly or indirectly. It may be that depression is not a unique correlate of appearance-based social media use/preoccupation because it is not as directly involved in validation-seeking and desire for social connection. Alternatively, and consistent with extensive research such as the dual pathway (Stice, 2001) and tripartite models (Thompson et al., 1999), which posit that sociocultural pressures lead to body dissatisfaction and, subsequently, to negative outcomes like depression, it may be that depression is a consequence of sociocultural pressures and disordered body image rather than a predictor. This warrants future investigation.

4.3. Strengths, limitations, & suggestions for future research

To our knowledge, this study was the first to operationalise and empirically examine Perloff's (2014) Transactional Model of Social Media Use and Body Image Concerns (2014). It employed psychometrically validated instruments, included a large sample size, and used advanced statistical techniques. However, despite its strengths, there were also several limitations. First and perhaps most importantly, although using a cross-sectional design is a logical first step when testing a model for the first time, this precludes conclusions about temporal and causal relationships. Future research should employ longitudinal designs in order to examine temporal precedence. This is particularly the case for thin-ideal internalisation, which, according to the Tripartite Influence Model (Thompson et al., 1999), is the result of, rather than the precursor to (as suggested by Perloff), social media use. A longitudinal design would allow the two models to be compared more accurately and would allow for testing of bidirectional relationships over time. A second limitation was the somewhat homogenous sample of young women who were all living in Australia and were primarily White. Future research should replicate and extend this study in other locations with diverse populations. The final limitation of this study concerns the measurement of uses and gratifications. The Uses and Gratifications Scale (Menon & Meghana, 2021) was originally developed for Facebook, yet participants reported relatively low Facebook engagement, limiting its usefulness for this study (as originally designed). Thus, item wording was changed from "Facebook use" to "social media use" for this study.

Yet, this modification could not fully capture platform-specific differences in uses and gratifications. In addition, the information-seeking subscale showed poor internal consistency (Cronbach's $\alpha = .51$) and was not included in model testing. Future research would benefit from using validated platform-neutral measures, such as the Motivations of Social Media Use Scale (Rodgers et al., 2021), particularly given that young women often use social media to seek information on beauty trends, exercise routines, and idealised lifestyle practices. In addition, other uses and gratifications not included in the Menon and Meghana (2021) measure could be investigated, such as seeking appearance feedback, entertainment, or social capital (e.g., see (Jarman et al., 2021)).

There are avenues for further empirical enquiry that will build on this study. For instance, it would be useful to test Perloff, (2014) model in its entirety to examine both the antecedents and consequences. In addition, it would be useful to include the internalisation of other contemporary societal body ideals, such as the fit and curvy body ideals (Uhlmann et al., 2018). Since Instagram popularised the fit ideal, and the curvy ideal is gaining societal prominence primarily from social media, we may observe varying relationships with vulnerability factors and the tendency to engage in appearance-based social media use. Although Perloff's proposed model was informed by a gratification-based framework (Blumler & Katz, 1974; Katz et al., 1973), the results yielded limited support for the proposed indirect associations, suggesting that gratifications may not be the primary mechanism through which individual vulnerabilities contribute to appearance-related social media use and preoccupation. Rather than uses and gratifications acting as mediating pathways, and aligned with previous research by Jarman et al. (2021), gratifications such as escape, socialising, or affection-seeking may instead play unique roles in online appearance-related behaviours.

4.4. Conclusion

While the results challenge aspects of Perloff's (2014) model, they provide valuable insights into the possible direct and indirect roles of individual vulnerabilities, especially appearance-related vulnerabilities and the importance of affection-seeking and socialising gratifications, in appearance-based social media use/preoccupation. The results of this study suggest that worthy targets for reducing problematic appearance-based social media use may include appearance-contingent self-worth, appearance perfectionism, thin-ideal internalisation and gratifications to socialise and seek approval and validation. In addition, the findings revealed the complex role of self-esteem in increasing the use of social media for socialising and affection-seeking online, which can then have the negative side effect of increasing preoccupation with appearance-related content, self-presentation, and social comparisons of appearance online. The insights gained from this research provide a foundation for future studies and interventions aimed at understanding and mitigating the negative impacts of appearance-based social media use.

CRediT authorship contribution statement

Zimmer-Gembeck Melanie: Writing – review & editing, Supervision, Formal analysis, Data curation, Conceptualization. **Uhlmann Laura:** Writing – review & editing, Supervision, Formal analysis, Conceptualization. **Donovan Caroline:** Writing – review & editing, Supervision, Methodology, Conceptualization. **Charlie-Jean Seeto:** Writing – review & editing, Writing – original draft, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Ethical approval

All procedures performed were in accordance with the ethical

standards of the institutional and/or national research committee (**blinded for peer review**) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Funding

This work was supported by an Australian Research Training Grant to the first author.

Declaration of Competing Interest

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 paper.

Acknowledgements

We extend our gratitude to Robyn Lowe and Jennifer Qarri for their support with data collection and management. We also sincerely thank Dr. Natalie Loxton for her expert statistical guidance and advice.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at [doi:10.1016/j.bodyim.2026.102034](https://doi.org/10.1016/j.bodyim.2026.102034).

Data Availability

Data and analysis code for this study are available by emailing the corresponding author..

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