

Intensity of Social Media Usage and Body Image: Examining the Mediating Roles of Internalization of Appearance Ideals and Social Comparisons in Young Women

Jaehee Jung¹, David Barron², Young-A Lee³, & Viren Swami^{2,4}

¹Department of Fashion and Apparel Studies
University of Delaware, Newark, Delaware, U.S.A.
e-mail: jajung@udel.edu

²Centre for Psychological Medicine, Perdana University,
Kuala Lumpur, Malaysia
e-mail: david@perdanauniversity.edu.my

³Department of Consumer and Design Sciences,
Auburn University, Auburn, Alabama, U.S.A.
e-mail: yalee@auburn.edu

⁴ School of Psychology and Sport Science,
Anglia Ruskin University, Cambridge, United Kingdom
e-mail: viren.swami@aru.ac.uk

Contributions

Conceptualization of study design and methodology was developed by Jaehee Jung. Material preparation, data collection and analysis were performed by Jaehee Jung, David Barron and Viren Swami and Young-A Lee. The first draft of the manuscript was written by Jaehee Jung and Virent Swami made a significant contribution to revisions. All authors approved the final manuscript.

¹Corresponding Author

Correspondence to Jaehee Jung.

Abstract

There is increasing scholarly interest in the effects of social media use on women's body image. Here, we tested the utility of the Tripartite Influence Model – developed for traditional media influences on body image – in explaining the link between intensity of social media use and body image outcomes in young adult women from the United States ($N = 579$). The study tested a serial indirect mediation effect linking intensity of social media use and body esteem outcomes via internalization and social comparison, as well as a direct effect between intensity of social media use and body esteem measures. The results broadly supported for the applicability of the model. Internalization of appearance ideals and social comparison, respectively, were significant mediators of the relationship between intensity of social media use and body image outcomes. However, the direct link between intensity of social media use and body image was more equivocal. The overall findings suggest possible pathways through which intensity of social media use may influence body image outcomes in young adult women.

Keywords: Body image, social media, body esteem, mediation, appearance internalization, social comparison

1. Introduction

Body image generally refers to a multifaceted construct comprised of perceptual (i.e., how we think we look), emotional (i.e., how we feel about our body), attitudinal (i.e., how we evaluate our body), and behavioral (i.e., our actions toward our body) components (Cash & Pruzinsky, 2002; Cash & Smolak, 2011). Sociocultural theories (e.g., Heinberg, 2001; Swami, 2015) of body image emphasize the role of societal and cultural factors in the maintenance of negative body image. For instance, the Tripartite Influence Model suggests there are three primary sociocultural variables (i.e., peers, parents, and media) that influence the development of negative body image (Thompson et al., 1999). Mass media, in particular, are thought to transmit sociocultural symbols that are unrealistic and unachievable for most individuals (e.g., images of excessive thinness in women; Keery et al., 2004), as well as the notion that the body is inherently malleable and that body-work is both normal and required (Levine & Smolak, 2010; Swami, 2021). Consistent with this view, meta-analyses have generally reported that exposure to various forms of media (e.g., television, magazines) is associated with negative body image (e.g., Bartlett et al., 2008; Grabe et al., 2008; but see Ferguson, 2013, for a dissenting view).

Most studies examining the efficacy of the Tripartite Influence Model to date have focused on traditional mass media (e.g., magazines), but with the emergence of social networking sites (SNSs; e.g., Facebook, Instagram, Pinterest, Twitter, Snapchat), there has been increasing interest in the impact of social media on body image (Perloff, 2014; Fardouly & Vartanian, 2016). In part, this has been motivated by the easy access to, and the large amounts of time spent on social media (Villanti et al., 2017) – with young women, in particular, being heavy users (Perrin & Anderson, 2019). Additionally, social media is known to be highly appearance-focused, with content and messaging promoting idealized, unrealistic, and unachievable beauty

ideals and standards (Mingoia et al., 2017; Rodgers & Melioli, 2016). Relatedly, consumers often experience pressure to present their “best self” on social media platforms, particularly platforms that rely heavily on image-based content (e.g., Chua & Chang, 2016; Cohen et al., 2018).

Given this background, it is unsurprising that scholars have extensively examined associations between social media use and indices of negative body image. However, extant studies have returned mixed findings, with correlational studies variously showing that social media use is associated with negative body image (e.g., de Vries et al., 2014; Manago et al., 2015; Tiggeman & Anderberg, 2020) or finding no significant association (e.g., Cohen et al., 2017). Indeed, one recent meta-analysis of 63 independent samples reported only a weak, positive relationship between social media use and negative body image ($r = .17$, $CI = .13, .21$; Saiphoo & Vahedi, 2019). In explanation, it may be that social media platforms are diverse, allowing for a range of purposes and motivations in social media usage, which in turn weakens any association with body image outcomes (Fardouly & Holland, 2018; see also Ferguson, 2013). Another possibility is that, compared to traditional forms of media, social media usage requires greater engagement and, as a result, users are likely to be more critical of idealized media content (Saiphoo & Vahedi, 2019).

An additional pressing concern is that many studies examining links between social media and body image outcomes have operationalized the former construct in terms of time spent on social media. For instance, de Vries and colleagues (2016) reported that greater time spent on social media predicted more negative body image in adolescents 18 months later. However, although such work suggests that greater time spent on social media is associated with more negative body image, effect sizes have tended to be weak (Saiphoo & Vahedi, 2019). In the

broader literature on social media effects, however, scholars have suggested that focusing on time spent on social media *per se* may provide a relatively blunt assessment of the construct of interest (e.g., Brailovskaia et al., 2018). Instead, attention has shifted on to *intensity* of social media use, which refers to the frequency of social media use that goes beyond merely time spent on social media sites to viewing social media use as part of one's core everyday activities (Boer et al., 2021; Salehan & Negahban, 2013). For instance, intensity of social media use has been shown to be associated with poorer psychological well-being (e.g., Mérelle et al., 2018), including more negative body image (Jarman et al., 2022).

Beyond the way in which social media use is operationalized, it also important to note that while the Tripartite Influence Model allows for a direct path between media exposure and body image outcomes, it also suggest that this pathway is likely mediated by two important factors (Thompson et al., 1999). Specifically, sociocultural models suggest that individuals engage in appearance-related social comparisons with (i.e., comparing one's appearance with that of models seen in mass media), and internalization of (i.e., taking external cues about appearance ideals and making them available for one's internal views), beauty ideals depicted in mass media (Keery et al., 2004; Thompson et al., 1999). Both of these processes are proposed as mediating the relationship between media consumption and negative body image (Schaefer et al., 2015), with a large number of studies supporting these assumptions in traditional media (e.g., Hazzard et al., 2019). Importantly, and consistent with the Tripartite Influence Model, studies have also found that internalization of appearance ideals (e.g., Feltman & Syzmanski, 2018) and engagement in social comparison processes (e.g., Fardouly et al., 2017; Hogue & Mills, 2019) mediate the relationship between social media usage and negative body image.

To date, however, most studies applying the Tripartite Influence Model to social media use have focused on singular aspects of the model (e.g., social comparison or internalization singularly), and applications of the integrated model remain infrequent. One important exception was a recent study of Australian adolescents (Jarman et al., 2021), where it was reported that appearance-focused social media use was weakly associated with lower body satisfaction. Importantly, this study also reported greater appearance idealization and social comparisons mediated the relationship between social media use and body satisfaction. Another earlier study found that social media use was associated with body dissatisfaction via internalization of appearance ideals and social comparison among adolescents (Rodgers et al., 2020). In girls specifically, thin ideal internalization was found to mediate the association between social media use and body dissatisfaction. Further, there is evidence of a serial mediation between social media use and body dissatisfaction via thin ideal internalization and social comparison in adolescent girls (Scully et al., 2022).

However, much more can be done to build on these findings, especially given that much of the present evidence base is limited to adolescent samples. Indeed, the available evidence suggests that social media use varies with age (Villanti et al., 2017) and that associations between social media use and body image outcomes weaken with increasing age (Saiphoo & Vahedi, 2019). As such, it may be useful to extend the scope of available research to other age groups, particularly young adult women who are one of the most active groups of social media users (Perrin & Anderson, 2019). Young adulthood also marks an important developmental period during which interventions to promote healthier body image may be particularly useful (Rounsefell et al., 2020). It, therefore, remains an important task for researchers to more fully

investigate the utility of the Tripartite Influence Model in explaining possible links between social media use and negative body image in young adult women.

1.1. The Present Study

Here, we tested the utility of the Tripartite Influence Model in explaining the link between social media use and body image outcomes in young adult women from the United States. For our purposes, we operationalised social media use in terms of intensity (i.e., frequency of social media use and the extent to which social media is viewed as part of one's core everyday activities) and body image in terms of weight- and appearance-related body esteem, which are two important and distinct components of negative body image in young women (Mendelson et al., 2001). Specifically, and consistent with the perspective of the Tripartite Influence Model (Thompson et al., 1999), we tested a serial indirect mediation effect (i.e., a mediation via two or more mediators that are causally and closely associated due to theoretical underpinnings or empirical findings) linking social media usage and body esteem via internalization and social comparison. In our models, we hypothesized that the order of the assumed mediation would be: social media usage → internalization of appearance ideals → social comparison → body esteem (weight and appearance), though we also allowed for a direct path from internalization → body esteem. These hypothesised serial links, which are depicted graphically in Figure 1, are consistent with the theorising of the Tripartite Influence Model (e.g., Donovan et al., 2020).

2. Method

2.1. Participants

Following exclusion of participants who were missing substantial portions of data (> 60%), the total sample included 579 women ranging in age from 17 to 26 ($M = 20.21$, $SD =$

1.38). In terms of racial background, 83.4% self-identified as White (non-Hispanic and non-Latino), 4.8% as Black or African American, 4.7% as Hispanic or Latino, 3.8% as Asian, 0.7 as American Indian or Alaska Native, 0.2% as Native Hawai'ian or Other Pacific Islander, and 2.4% as of another race including multiple ancestries. In terms of education, 1.2% had completed high school, 93.1% had some college education, 4.0% had completed college, and 1.7% had some graduate school education. Because the online survey link was shared through social media sites and class announcements on a university campus, participants represented a variety of majors and colleges. Given the variability of effect sizes between social media use and body image outcomes (Saiphoo & Vahedi, 2019), we assumed a small effect size. In order to have 0.8 power to detect a small effect size of the indirect effect when conducting mediation analysis using a bootstrapping approach (Fritz & Mackinnon, 2007), we required a sample of 224. The current sample size was, therefore, deemed sufficiently powered.

2.2. Materials

2.2.1. Social media intensity. The Social Networking Intensity scale (SNI; Salehan & Negahban, 2013) was to measure the intensity of participants' intensity of social media use. The SNI scale consists of five items (sample item: "Visiting social networking sites is part of my everyday activity") that were rated on a 7-point Likert-type scale with anchors ranging from 1 (*never*) to 7 (*always*). Higher scores indicate greater intensity of using of social media networking sites and viewing social media as part of one's core everyday activities. Scores on the SNI have been shown to have adequate construct validity (e.g., Oberst et al., 2017). McDonald's omega for scores on this measure was .76 (95% CI = .70, .77).

2.2.2. Social comparison. The Physical Appearance Comparison Scale-Revised (PACS-R; Schaefer & Thompson, 2014) was used to assess the extent to which individuals compare

their physical appearance to that of others in the social media context (sample item: “When I am on social media, I compare my physical appearance to the appearance of others”). Participants were asked to rate four items on a 5-point Likert-type scale ranging from 1 (*never*) to 5 (*always*). Scores on the PACS-R scale demonstrate adequate internal consistency and convergent validity with measures of body satisfaction and eating pathology (Schaefer & Thomson, 2014). McDonald’s omega for scores on this measure was .94 (95% CI = .93, .95).

2.2.3. Internalization of appearance ideals. To assess participants’ desire to attain a thin figure with little body fat, we used the Internalization: Thin/Low Body Fat subscale of the Sociocultural Attitudes Toward Appearance Questionnaire-4-Revised (SATAQ-4R; Schaefer et al., 2017). This subscale consists of 4 items (sample item: “I want my body to look very thin”) that were rated on a 5-point Likert-type scale ranging from 1 (*definitely disagree*) to 5 (*definitely agree*). Scores on the SATAQ-4R, including the Internalization subscale, have adequate reliability, construct validity, and test-retest reliability up to two weeks (Schaefer et al., 2017). Here, McDonald’s omega was .87 (95% CI = .84, .87).

2.2.4. Body esteem. The Body-Esteem Scale for Adolescents and Adults (BESAA; Mendelson et al., 2001) consists of 23 statements reflecting affective evaluations of body characteristics. It has three factor-analytically derived subscales: Appearance, Weight, and Attribution. The Appearance subscale measures general feelings about appearance (sample item: “I like what I look like in pictures”), whereas the Weight subscale measures general feelings about weight (sample item: “I am satisfied with my weight”). The Attribution subscale was not utilized here, as it measures perceptions of others’ evaluations about one’s body and appearance (Garbett et al., 2021). All items were rated on a 5-point Likert-type scale ranging from 1 (*never*) to 5 (*always*). Scores on the BESAA have been found to have adequate internal consistency and

construct validity (Mendelson et al., 2001). In the present study, McDonald's omega was .90 (95% CI = .89, .92) for Appearance scores and .92 (95% CI = .91, .93) for Weight scores.

2.2.5. Social media usage characteristics. As reference information on social media engagement behaviors, participants were asked to respond to the question, "Which of the following social media networking site do you use the most?" The options included: *Facebook*, *Instagram*, *Twitter*, *Pinterest*, *Snapchat*, and *Other*. Participants were able to type a specific networking site when *Other* was selected. Participants were also asked to respond to the nine items regarding social media engagement frequencies and patterns, taken from the Media and Technology Usage and Attitudes Scale (MTUAS; Rosen et al., 2013; sample item: "How often do you post status updates on social media?"). A 10-item frequency response scale was used for these items, ranging from 1 (*never*) to 10 (*all the time*), and these data were used for purely descriptive purposes at the level of individual items.

2.3. Procedures

The study employed a quantitative data collection strategy by collecting primary data from college-aged young adult women using an online survey method. Participants were recruited by requesting voluntary participation in an online survey among young adult women through social media sites using a snowballing technique. Participants were also recruited from several classes on two university campuses, one in the mid-Atlantic region and another in the Southeast region of the United States. For campus recruitment, instructors made class announcements requesting voluntary participation through online course management sites. Inclusion criteria in all cases included identifying as a young adult woman who used at least one form of social media. The survey was developed via Qualtrics upon receiving human subjects' approval from the principal investigator's Institutional Review Board. The online survey was

estimated to take about 15 to 20 minutes to complete. A participant information page was made available at the beginning of the survey to provide participants with brief information about the project, to inform participants that their participation was completely voluntary, and to indicate that participants could withdraw at any time if they felt uncomfortable participating in the survey. All participants provided digital informed consent, were not remunerated for participation, and were debriefed upon completion of their surveys. IP addresses were checked to ensure that participants only completed a single survey.

2.4. Statistical Analyses

Social media usage characteristics were analysed using frequencies for sample descriptive purposes. There were no missing data in the retained dataset. To test our study hypotheses, we first computed bivariate (Pearson) correlations between intensity of social media use, internalization of appearance ideals, social comparison, and the BESAA Appearance and Weight subscales. These analyses were conducted using IBM SPSS Statistics v.28 and effect sizes were interpreted based on Cohen's (1992) standards. Next, mediation analysis was performed with IBM SPSS Statistics v.28 using the PROCESS macros v.3.5 (model 6; Hayes, 2018), which provides ordinary least squares regression-based path analysis with safeguards against irregular sampling distributions (Hayes et al., 2017). The PROCESS macro was suitable for use in the present study because all variables were directly measured and because it was specifically developed to assess complicated regression pathways, including mediating variables (Hayes et al., 2017). Two separate mediation models were tested [see Fig. 1(a) and 1(b)], with the two BESAA variables of Appearance and Weight as outcomes, respectively. To do so, we used the bootstrap method (Hayes, 2018), with the recommended 5,000 bootstrap samples drawn from the dataset to calculate indirect and direct effects, as well as bias-corrected 95% CIs

(Preacher & Hayes, 2008). Effects were considered to be significant if the respective CI did not overlap zero (Mallinckrodt et al., 2006).

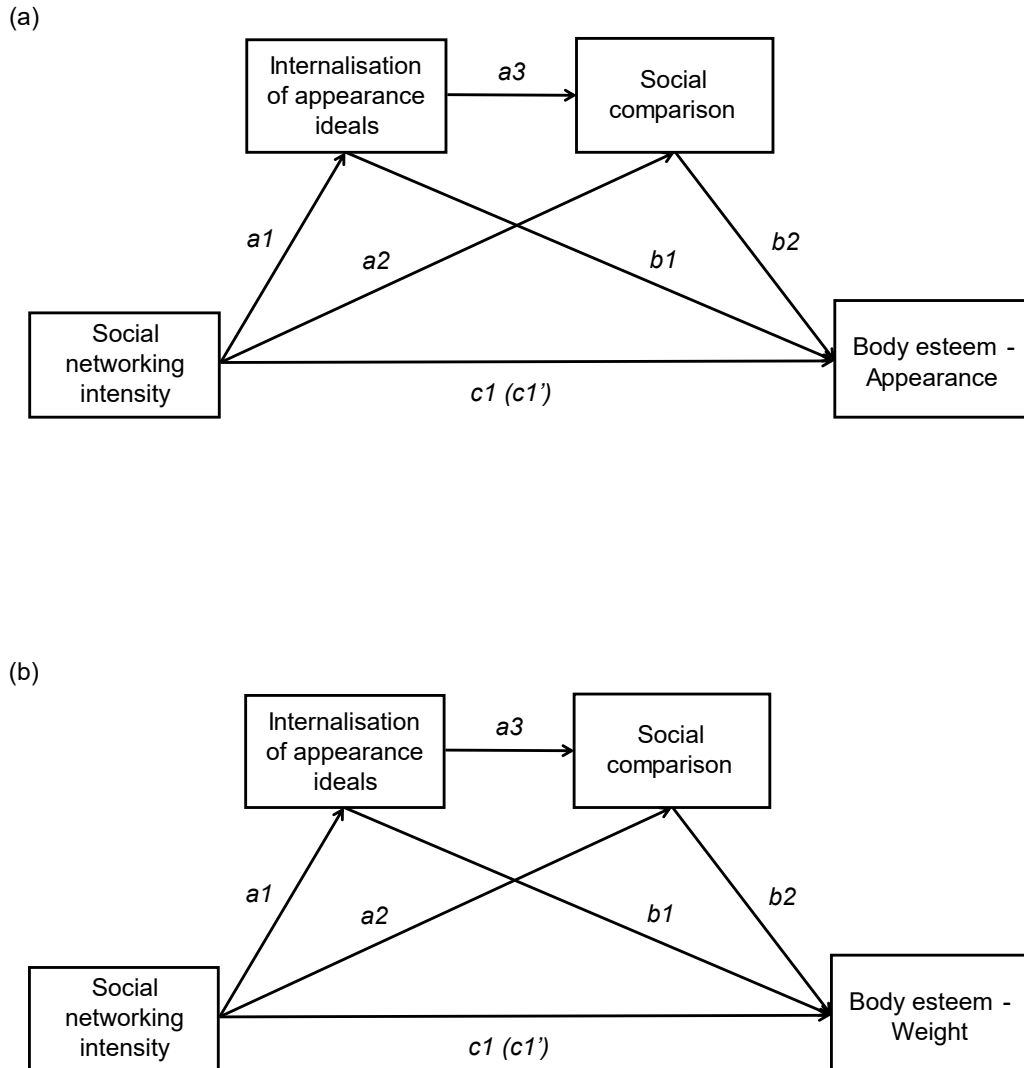


Fig. 1. *Hypothesized Mediation Models with Pathway Notations.*

3. Results

3.1. General Social Media Usage Characteristics

All participants responded to the most frequently used social media networking site. The most frequently used form of social media networking site was Instagram (70.5%), followed by Snapchat (18.1%), and Twitter (5.2%). Some selected Other as their response; typed responses included WeChat and YouTube. The two most frequently used social media sites by study participants – Instagram and Snapchat – were also reported especially popular among young adults in the United States (Perrin & Anderson, 2019). Most participants engaged in social media at least several times a day. Nearly half of the participants indicated that they checked social media several times a day (45.4%), followed by several times an hour (26.6%), all the time (12.2%), and once an hour (7.7%) as main responses. The participants also indicated that they browsed profiles and photos on social media several times a day (39.5%), followed by several times a week (13.7%), several times an hour (11.1%), once a day (8.9%), all the time (8.9%), and once an hour (7.0%). Participants indicated that they spent more time browsing profiles and photos of others than posting of their own photos on social media.

3.2. Descriptive Statistics

Descriptive statistics (*Ms* and *SDs*) for all variables are reported in Table 1, as are inter-scale correlations between all variables. The correlational matrix indicated that intensity of social media use was significantly and positively associated with appearance ideal internalization and social comparison, but was not significantly associated with the BESAA subscale scores of Appearance and Weight. All other inter-scale correlations were significant, positive, and moderate to strong.

Table 1

Descriptive Statistics and Bivariate Correlations between All Variables for the Total Sample (N = 579).

	(1)	(2)	(3)	(4)	(5)
(1) Intensity of social media use		.19*	.22*	-.06	.03
(2) Internalization of appearance ideals			.56*	-.49*	-.47*
(3) Social comparison				-.59*	-.48*
(4) Body esteem – appearance					.77**
(5) Body esteem – weight					
<i>M</i>	5.10	3.56	3.36	2.88	2.97
<i>SD</i>	1.08	0.91	1.03	0.69	0.85

Note. * $p < .05$, ** $p < .001$

3.3. Mediation Analysis

For the hypothesized model with Appearance as the outcome variable (see Figure 1a), the mediation model accounted for a significant proportion of the variance, $F(1, 577) = 22.06$, $p < .001$, $R^2 = .04$. There was a significant indirect effect (c') of social media intensity on Appearance via internalization of appearance ideals ($a1 \times b1 = -.057$, bootstrap SE = .017, 95% bootstrap CI = -.093, -.029). There was also significant indirect effect of social media intensity on Appearance via social comparison ($a2 \times b2 = -.071$, bootstrap SE = .022, 95% bootstrap CI = -.115, -.027). Finally, there was also significant indirect effect of social media intensity on Appearance via both internalization of appearance ideals and social comparison ($a1 \times a3 \times b2 = -.064$, bootstrap SE = .016, 95% bootstrap CI = -.096, -.035). All direct effects had a significant positive pathway in this model (see Table 2 for direct effect coefficients).

For the hypothesized model with Weight as the outcome variable (see Figure 1b), the mediation model accounted for a significant proportion of the variance, $F(1, 577) = 22.06, p < .001, R^2 = .04$. There was a significant indirect effect (c') of social media intensity on Weight via internalization of appearance ideals ($a1 \times b1 = -.073$, bootstrap SE = .019, 95% bootstrap CI = -.235, -.107). There was also significant indirect effect of social media intensity on Weight via social comparison ($a2 \times b2 = -.051$, bootstrap SE = .016, 95% bootstrap CI = -.084, -.021). Finally, there was also significant indirect effect of social media intensity on Weight via both internalization of appearance ideals and social comparison ($a1 \times a3 \times b2 = -.046$, bootstrap SE = .012, 95% bootstrap CI = -.071, -.024). All direct effects had a significant positive pathway in this model (see Table 2 for direct effect coefficients).

Table 2

Model Summary (Standard Errors; SE) of Direct Effects for the Hypothesized Models (N = 579).

Model Pathway	Body Esteem – Appearance			Body Esteem – Weight		
	Coefficient (SE)	<i>t</i>	95% CI	Coefficient (SE)	<i>t</i>	95% CI
<i>a1</i>	.129 (.028)	4.70	.075, .183	.129 (.028)	4.70	.075, .183
<i>a2</i>	.087 (.026)	3.29	.035, .139	.087 (.026)	3.29	.035, .139
<i>a3</i>	.608 (.039)	15.48	.531, .686	.608 (.039)	15.48	.531, .686
<i>b1</i>	-.444 (.075)	-5.93	-.591, -.297	-.564 (.078)	-7.20	-.718, -.410
<i>b2</i>	-.812 (.067)	-12.16	-.943, -.681	-.580 (.070)	-8.30	-.717, -.443
<i>c1</i>	.122 (.043)	2.85*	.038, .206	.202 (.045)	4.50	.114, .290

Note. * $p = .005$, all other $ps \leq .001$

4. Discussion

The purpose of the present study was to examine the utility of the Tripartite Influence Model in explaining the association between intensity of social media use and body image outcomes in a sample of young adult women. In broad outline, our results provide support for the applicability of the model: we found that internalization of appearance ideals and social comparisons, respectively, were significant mediators of the relationship between intensity of social media use and body image outcomes. Additionally, we also found evidence of a serial mediation linking intensity of social media use → internalization of appearance ideals → social comparison → body esteem. These findings were consistent when considered in relation to both the Appearance and Weight subscales of the BESAA. Generally speaking, these results are consistent with previous work showing that the Tripartite Influence Model explains the relationship between social media usage and body image outcomes in adolescents (Jarman et al., 2021; Rodgers et al., 2020; Scully et al., 2022), as well as studies indicating that singular factors of the model offer explanatory power (e.g., Fardouly et al., 2017; Feltman & Syzmanski, 2018; Hogue & Mills, 2019).

Importantly, our results suggest that the direct link between intensity of social media use and body image outcomes was equivocal. In correlational analyses, intensity of social media use was not significantly correlated with scores on either the Appearance or Weight subscales, whereas in our mediation analyses we found that the direct links were both weak and positive in valence. Although there may have been an expectation that these relationships would be weak (Saiphoo & Vahedi, 2019), the finding of a positive relationship in our mediation analyses was somewhat anomalous. Nevertheless, it should be noted that a review of relevant studies indicated that substantive heterogeneity in the link between social media use and body image outcomes

(i.e., not all studies have found a negative association, with some studies indicating positive relationships and yet others indicating no significant relationship; Saiphoo & Vahedi, 2019). The present findings may be reflective of the broad uses of social media, including possible critical engagement with body image-related content (Saiphoo & Vahedi, 2019); that is, given the way in which we measured intensity of social media use, we cannot rule out the possibility that participants may have been using social media in ways that dampened effects on negative body image. Indeed, a similar finding was found *vis-à-vis* appearance-related social media use and body satisfaction in previous work (Jarman et al., 2021). Alternatively, it may be that the present results were influenced by possible moderators of the relationship between social media use and body image outcomes, such as participant age, type of social media use, or country (Saiphoo & Vahedi, 2019).

A more likely possibility, however, is that the real-world association between frequency of social media use and body image outcomes is likely weak (Saiphoo & Vahedi, 2019) and, in the case of our study, negligible. In this case, it is possible that suppression effects (MacKinnon et al., 2000) from internalization and/or social comparisons affected the direct effect; that is, the statistical removal of the mediational effects affected the magnitude and valence of the relationship between social media usage and body image outcomes. Indeed, such suppressor effects are more likely to occur in complicated models with multiple mediators (MacKinnon et al., 2000), such as ours. Our findings are also consistent with theorising of the Tripartite Influence Model, which suggests that direct effects may be weak when considered in the absence of the mediating effects of internalization of appearance ideals and social comparison. Indeed, the key point to emphasize is that the present findings suggest that any direct relationship between intensity of social media use and body image outcomes is likely very weak, which is consistent

with previous work (Saiphoo & Vahedi, 2019). One way in which this aspect of our work could be extended would be to focus on appearance-focused social media use, which has been shown to be more strongly linked with body image outcomes than social media use alone (Jarman et al., 2021).

Importantly, our results showed that both internalization and social comparisons, respectively, were significant mediators of the relationship between social media use and body image outcomes. In the first instance, we found that intensity of social media use was associated with greater internalization of appearance ideals consumed on social media, which in turn was negatively associated with body image outcomes. In the second instance, our results also suggested that greater intensity of social media use was associated with a greater likelihood of engaging in social comparisons with models seen on social media, which in turn was associated with more negative body image. Additionally, we also found evidence that intensity of social media use was associated with greater internalization, which in turn was associated with greater social comparisons and thence negative body image. Taken together, these findings provide support for the application of the Tripartite Influence Model to social media use in young adult women.

In broad outline, the present findings help to explain the mechanistic pathways through which intensity of social media use may influence body image outcomes. For instance, more frequent social media use likely brings consumers into greater contact with idealized images of appearance, as well as implicit and explicit narratives suggesting that the body is inherently malleable, that work on the body and beauty practices are normative, and that a reluctance to work on one's appearance is pathological (Swami, 2021). This places pressure on individuals to internalize appearance ideals, creating stringent and unrealistic appearance standards for

themselves (Jarman et al., 2021; Rodgers et al., 2020). Indeed, prior work has found that engagement with social media (e.g., posing photos) was associated with greater internalization of the thin ideal in girls (McLean et al., 2015; Meier & Gray, 2014). Consistent with these perspectives, our results suggest that greater intensity of social media – such as checking social media multiple times per day – may bring individuals into contact with applications that centre physical appearance and thus lead to increased perceived pressure to attain appearance ideals.

In tandem with this, viewing idealized images on social media provides opportunities to compare one's appearance with that of (idealized images) of others. The Tripartite Influence Model aligns with social comparison theory, which suggests that individuals frequently compare themselves to similar others (Festinger, 1954). Given that similar others are likely to be encountered on social media (Fardouly et al., 2017; Rodgers et al., 2020), individuals may engage in social comparison processes that result in more negative body image. Indeed, previous work has shown that exposure to edited social media photos of young women led directly to lower body image, with effects strongest for participants high in trait social comparison (Kleemans et al., 2018). Thus, social comparison process that result in discrepancies between one's perceived appearance and internalized standards of appearance likely contribute to negative body image (Wang et al., 2017), which is what we found here. Overall, then, the present findings suggest that both internalization and social comparisons may help explain the ways in which intensity of social media use affects body image outcomes.

The main limitation of the present study was the reliance on a cross-sectional design, which limits our ability to draw causal inferences. More specifically, although mediation hypotheses are causal hypotheses (James & Brett, 1984), the statistical models used to test mediation are not inherently causal (Sobel, 2008) and so it is difficult to draw causal claims

about our results (Agler & De Boeck, 2017). For instance, although it would be inconsistent with the theorizing of the Tripartite Influence Model (Thompson et al., 1999), it is possible that more negative body image increases social comparison tendencies, which in turn shapes social media usage. While acknowledging this limitation, we also note that our results – and our interpretation of our results – are consistent with decades of theorizing and empirical research, including prospective research (e.g., Jarman et al., 2021) based on the Tripartite Influence Model. In a similar vein, although we tested a model in which internalisation of appearance ideals preceded social comparison processes, which is consistent with earlier work (e.g., Donovan et al., 2020; Schaefer et al., 2021), it may be that social comparison is an antecedent of internalisation or that there are bidirectional links between these factors. This is an aspect of the present work that could be tested more fully in the future.

Another limitation of the present study was the reliance on a convenience sample, which limits the generalisability of our findings. That is, we cannot claim that our sample is either representative of social media users or of college-aged young women in the United States. For similar reasons, we also cannot be certain that our results will generalize to other national contexts, which would require future cross-cultural research. Importantly, the present study also did not sample men. Given that one meta-analysis has indicated that the effects of social media use on body image outcomes are similar across women and men (Saiphoo & Vahedi, 2019), it will be important to rectify this oversight in future work. In such future work, it would also be useful to include additional variables that may improve the explanatory power of our hypothesized models. For instance, it would be useful to consider both the utility of a more focused social media use instrument (e.g., an instrument focused on appearance-related social

media usage), as well as additional variables such as perceived pressure to attain appearance ideals from social media.

4.1. Conclusion

These limitations notwithstanding, the present results suggest that the direct link between intensity of social media use and body image outcomes is likely very weak, and instead that the link between these factors is better understood via the mediating variables of social comparison and internalization of appearance ideals. These results may have important practical implications. First, despite the weak direct effect, practitioners that come into contact with young adult women (e.g., mental health providers, parents/caregivers), as well as young adult women themselves, should be made aware of the influence of social media intensity on negative body image. In particular, it may be important to highlight the manners in which social media functions as a source of pressure on appearance ideals beyond that of traditional sources of appearance-related information (e.g., peers, family, traditional media). Indeed, de Vries et al. (2016) have suggested that social media may be an additional source of appearance pressure that should be considered alongside the three original sources proposed in the Tripartite Influence Model. In this sense, there may be value in clinicians and practitioners focussing on reducing internalization and social comparison processes, such as through media literacy interventions (e.g., McLean et al., 2016). Such programmes may be particularly effective if they can help young adult women become more informed and critical users of social media, which in turn can be expected to help minimize the detrimental effects of social media usage on body image outcomes in young women.

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