"Intermission!" A short-term social media fast reduces self-objectification among pre-teen and teen dancers[☆]

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A R T I C L E   I N F O

A B S T R A C T

Social media use is pervasive among youth and is associated with body image disturbance and self-objectification. The present study investigated whether a 3-day social media fast in a sample for whom social media is especially salient, female adolescent dancers, can mitigate such negative effects. Through an online survey, 65 pre-teen and teen girls, aged 10–19, completed measures of self-objectification (body surveillance and body shame), self-esteem and self-compassion both prior to and following three days of abstaining from all social media. During the fast, girls reflected on their experiences in group messages on the messaging app, WhatsApp. Overall, the fast had positive effects on participants, for whom body surveillance and body shame was significantly reduced after the fast. Self-compassion significantly mediated the change in both body surveillance and body shame, and self-esteem was a significant mediator of improvements in body shame. The content of girls' group messages revealed a number of themes, such as more positive mental states during the fast. Future research should continue to examine the potential of brief social media fasts as a means to alleviate appearance pressures adolescent girls face on these platforms in daily life.

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1. Introduction

U.S. teens are highly engaged with media. On average, they consume almost seven and a half hours of entertainment media on a daily basis, and sixty-three percent of teens report checking social media sites every day (Rideout & Robb, 2019). Furthermore, adolescent girls engage in social media use at a higher rate than adolescent boys, with female users spending an average of just over 2 h and 15 min per day on social media (Rideout & Robb, 2019). A growing body of research has examined the impact of social media (i.e., social networking sites, or SNSs, such as Instagram, Twitter, Pinterest, Snapchat or TikTok) on youth development (Shapiro & Margolin, 2014; Subrahmanyam & Šmahel, 2011), and notably has shown that SNS use is more strongly associated with problematic mental health outcomes in girls than in boys (Twenge et al., 2017). For example, one recent study showed higher risk of self-harm, depression, and lower levels of self-esteem are associated with social media engagement in adolescent girls but not boys (Barthorpe et al., 2020). Similarly, recent meta-analyses have found that greater social media use, especially use of appearance-related features, such as posting and commenting on photos, is associated with body disturbances in girls and women (Huang et al., 2021; Mingoia et al., 2017; Saiphoo & Vahedi, 2019).

Given the frequency with which adolescent girls engage SNS, it is especially important to identify ways to mitigate negative effects of social media on their body image, and yet surprisingly few intervention studies beyond school-based media literacy programs (e.g., Gordon et al., 2021) have been conducted to explore this issue in girls. To address this gap in the literature, the present study investigated the effects of a three-day, short-term social media fast on adolescent girls' body image. In addition to abstaining from their social media use, girls had daily "check ins" on a messaging app to share their experiences with a small group of other girls during the fast. Furthermore, girls in this study were dancers, an activity context in which body image issues are especially salient (Tiggemann & Slater, 2001). Indeed, a meta-analysis found that dancers have three

times higher risk of an eating disorder compared to the general population (Arcelus et al., 2014).

1.1. Social media, body image and self-objectification in girls

This study is informed by objectification theory (Fredrickson & Roberts, 1997), which argues that the pervasive cultural focus on attractive physical appearance as girls' and women's primary value, along with sexualized interpersonal treatment by others, coaxes them to internalize an observer's perspective on their bodies, to self-objectify, as a way of anticipating their treatment in the world. The potential for self-objectification was theorized to take hold as girls' bodies begin physically maturing (Fredrickson & Roberts, 1997) and a recent review of the literature indeed found that self-objectification increases with age across childhood and adolescence in girls (Daniels et al., 2020). This pattern may be explained by the onset of menarche which occurs in early adolescence. In the U.S., the median age of menarche is 11.9 years and 90% of girls reach menarche by age 14 (National Health Statistics, 2020).

Media are purveyors of physical attractiveness ideals, and the images and videos featuring young women and girls on SNSs that are consumed by millions of viewers every day are more often than not sexually objectifying, that is, heavily edited and emphasizing the importance of idealized sexy physical appearance over other characteristics of personal value (Deighton-Smith & Bell, 2018; Ghaznavi & Taylor, 2015; Talbot et al., 2017; Tiggemann & Zaccardo, 2018; Wick & Harriger, 2018). The economy of such images is, of course, "likes" and so girls and young women are motivated not only to gaze at such content to keep up with trending appearance standards, but also to turn the lens of the gaze on themselves, posting their own "selfies" (photos or videos of oneself taken by oneself) to gain approval via "likes" (Chua & Chang, 2016).

Given these patterns, it is no surprise that several meta-analyses have found negative effects of social media use on body image (Huang et al., 2021; Mingoia et al., 2017; Saiphoo & Vahedi, 2019). Furthermore, several studies with samples of adolescent girls have found associations between social media use and self-objectification (e.g., Markey & Daniels, 2022; Tiggemann & Slater, 2013, 2014; Zheng et al., 2019). Social media are especially relevant to those who participate in appearance-focused activities such as dance, and indeed dancers use these platforms to gain exposure and a following (Easter, 2020; Kaufman, 2019). Furthermore, the dance industry encourages young dancers to use social media to advance their careers (Brady, 2018), so it is clear that social media are especially relevant to dancers. Therefore, in the present study, we examined the effects of limiting the ubiquitous objectifying gaze on pre-teen and teen girl dancers for a brief period by asking them to disengage from SNSs.

1.2. Prevention programs aimed at improving body image

Programs designed to improve body image often include a focus on cultivating media literacy skills in which participants are taught to identify and critique idealized media images with the goals of reducing internalization of appearance ideals from media and social comparisons with idealized media images (Alleva et al., 2015; Daniels & Roberts, 2018; Wilksch, 2019). A systematic review of 16 studies found that greater media literacy is indeed protective against body image concerns (McLean et al., 2016). In addition, there is some evidence that social media prevention programs are similarly effective in buffering against body image concerns (Bell et al., 2021; McLean et al., 2017); however, a randomized controlled trial found mainly null patterns (Gordon et al., 2021).

In the U.S., whether youth are exposed to body image programing at school is variable across states and local school districts, despite the prevalence of body image concerns in U.S. youth (Wang et al., 2019) and the practical utility of reaching large numbers of youth via

schools (Daniels & Roberts, 2018). Given that access to school-based body image prevention programs is inconsistent in the U.S., research into alternatives is urgently needed. A small number of experimental studies with adults suggest another possible method of mitigating the negative impact of social media on users – abstinence (e.g., Hall et al., 2021; Turel et al., 2018).

These studies have investigated whether abstaining from or allowing only minimal (e.g., 10 min per day) daily social media use is related to a variety of outcomes including positive/negative affect, life satisfaction, stress, depression, and loneliness. Findings from this research have been mixed with some indicating positive effects following a period of abstinence, and others null or even negative effects such as increased loneliness (see Hall et al., 2021 for a summary). None of these experimental studies to our knowledge, however, have investigated the effect of social media abstinence on body image concerns or used adolescent samples. Further, no studies to our knowledge have intervened in social media use beyond having individuals simply abstain. Our study sought to address these shortcomings in the literature by testing the effect of a social media fast on body image concerns among small groups of adolescent girls, who participated in a group-based daily check-in via WhatsApp, a messaging application (i.e., app) for mobile phones, during the fast. The latter component of the study design was included to mitigate the negative effect of social media abstinence on social connection found in prior research (Sheldon et al., 2011; Vally & D'Souza, 2019), and particularly important to minimize among adolescents given the importance of social media to adolescents' social lives (Underwood et al., 2018). Of note, messaging apps allow for one-to-one communicative exchanges, or communication among small, private, closed groups. They are distinct from SNSs which are designed for users to interact with vastly wider audiences, and which involve targeted advertising and content.

1.3. Self-esteem and self-compassion as mediators

Mechanisms through which SNS use may lead to decreased body satisfaction in adolescent girls include upward body comparisons (Festinger, 1954; Rodgers et al., 2014; Rodgers et al., 2020) and internalization of societal beauty ideals through media (Cafri et al., 2005; Rodgers et al., 2014; Rodgers et al., 2020). Identifying factors to mitigate against these processes could protect against social media's damaging effects on body image. Two candidates, suggested in the literature, are self-esteem and self-compassion. Self-esteem and body dissatisfaction are strongly related among U.S. youth (van den Berg et al., 2010), and both the body surveillance and body shame features of self-objectification, negatively predict self-esteem in adolescents (Sicilia et al., 2020). Studies of undergraduates show that appearance-contingent self-worth is associated with higher self-objectification which, in turn, mediates the relationship between appearance-contingent self-worth and lower self-esteem (Adams et al., 2017), suggesting that intervening to quiet the relentless connection made on SNSs between one's appearance and one's worth might enhance self-esteem.

The distinct but related construct, self-compassion, defined as an accepting, non-judgmental and caring attitude towards oneself (Neff, 2003a), is predictive of positive body image, particularly in teen girls (Pullmer et al., 2019). In samples of college aged women, higher self-compassion is associated with lower levels of the body surveillance and body shame features of self-objectification (Liss & Erchull, 2015), and self-compassion has been shown to moderate the effect of the body surveillance on subjective happiness and depression (Wollast et al., 2019).

Two intervention studies suggest the mediating role self-esteem and self-compassion might play in promoting positive body image. In one, a school-based, health-promotion intervention delivered to 12th grade Norwegian high school students resulted in a direct effect of the intervention on positive embodiment in girls, and also found that self-esteem mediated the positive intervention effect for both

boys and girls (Sundgot-Borgen et al., 2020). Another randomized control study, in which late adolescent U.S. participants (*M* age = 18.36) received intervention messages targeting features of self-compassion via a mobile application, called *BodiMojo* for six weeks, resulted in significant improvements in appearance esteem in the intervention group relative to the control group (Rodgers et al., 2018). Thus, in the present study we sought to examine not only whether taking a break from social media could enhance teen girls' body image but, further, whether enhancing self-esteem and/or self-compassion would mediate the fast's effect on self-objectifying body attitudes.

1.4. The present study

The present study examined the effect of a brief social media fast on adolescent girls' self-objectification in the form of body surveillance and body shame. Changes in self-esteem and self-compassion during the fast were considered as possible mediators of the effect of the fast on self-objectification. In a within-subjects design, participants in small groups abstained from social media use for three days. During the three day period, girls posted daily check-ins to a group chat via WhatsApp. We predicted that participants would report lower body surveillance (Hypothesis 1) and lower body shame (Hypothesis 2) at Time 2 compared to Time 1. In addition, we expected age differences between younger (ages 10–14) and older (ages 15–19) girls, due to developmental differences between early and late adolescence (for example, the timing of menarche in early adolescence) and given evidence that self-objectification increases across adolescence in girls (Daniels et al., 2020). Accordingly, we predicted that younger girls would exhibit lower body surveillance (Hypothesis 3) and lower body shame (Hypothesis 4) at both time points compared to older girls. We also tested whether self-esteem (Hypothesis 5) and self-compassion (Hypothesis 6) mediated associations between the fast and self-objectification. Finally, we content analyzed girls' posts to their group chat reflecting on their experiences with the fast. No a priori hypotheses were made about the content of the posts.

2. Method

2.1. Participants

A total of 65 self-identified girls, ranging in age from 10–19 years old, with a mean age of 14.25 (*SD* = 2.40), participated in the intervention. The sample included 51 Caucasian/European-American girls (80%), 9 Latinx/Hispanic girls (14%), and 5 Asian-American girls (7%).

2.2. Measures

2.2.1. Self-objectification

The eight-item Body Surveillance (e.g., "I often worry about whether the clothes I'm wearing make me look good") and eight-item Body Shame (e.g., "I feel like I must be a bad person when I don't look as good as I could") subscales of the Objectified Body Consciousness Scale (OBCS; McKinley & Hyde, 1996) were used to assess self-objectification. Studies have demonstrated the validity of the use of the OBCS among pre-teens and teens (e.g., Dakanalis et al., 2017; Sicilia et al., 2020). Items were rated on a seven-point scale from 1 (Strongly Disagree) to 7 (Strongly Agree). Items were averaged and higher scores represent higher levels of each construct. In McKinley and Hyde's (1996) original study, Cronbach's alpha reliabilities for each of these subscales were.79 for Body Surveillance and.84 for Body Shame. In this sample, Cronbach's alphas were .87 for both Time 1 and 2 for Body Surveillance and .87 at Time 1 and.85 at Time 2 for Body Shame.

2.2.2. Self-esteem

The 10-item Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965), developed for assessing self-esteem in adolescents, was used to assess this construct (e.g., "I am able to do things as well as most other people"), and is the most widely validated scale for assessing feelings of global self-worth among those ages 12 to adult. Participants rated each item on a four-point non-numeric scale from 1 (Strongly Disagree) to 4 (Strongly Agree). Items were averaged and higher scores represent higher levels of the construct. This scale is the most commonly used measure of global self-esteem in adolescents and has demonstrated good reliability (alpha =0.77, Rosenberg, 1965) and construct validity in past studies (Crandall, 1973). The Cronbach's alphas for this sample were .89 at Time 1 and .88 at Time 2.

2.2.3. Self-compassion

Participants completed the 26-item Self-Compassion Scale (Neff, 2003b) to assess this construct. Five subscales measure Self-Kindness (e.g., "I try to be understanding and patient towards those aspect of my personality I don't like"), Self-Judgment (e.g., "When I see aspects of myself that I don't' like, I get down on myself"), Common Humanity (e.g., "I try to see my failings as part of the human condition"), Isolation (e.g., "When I fail at something that's important to me I tend to feel alone in my failure"), Mindfulness (e.g., "When I'm feeling down, I try to approach my feelings with curiosity and openness") and Over-Identification (e.g., "When something upsets me, I get carried away with my feelings"); however, the scale also yields an overall composite score which was used in the present study. Items were rated on a five-point scale from 1 (Almost Never) to 5 (Almost Always). Items were averaged and higher scores represent higher levels of the construct. Cunha et al. (2016) demonstrated that the SCS is a valid and reliable measure of self-compassion in adolescents. Reliability for the 26-item total scale was .92 in Neff's (2003b) original study and in this one was .94 at both Time 1 and Time 2.

2.3. Procedure

Participants were recruited from 2-hour workshops taught by the fourth author, a professional dancer, choreographer and dance educator, at seven dance studios and dance conventions across the United States and Canada between 2016 and 2018. The workshops focused on movement, identity and self-reflection in the performing arts. At the end of each workshop, when parents came to pick up their daughters, teachers asked for volunteers to participate in a three-day social media fast. Informed consent was obtained by the parents of those who volunteered and child assent was obtained from participants under the age of 18. In this process, participants were informed of their rights as a research participant including withdrawing with no penalty. Participants were sent a link to complete an online survey prior to the fast starting and again within five days after completing the fast. Measures were administered in a random order at both time points.

Seven groups of participants were formed from the dance workshops. Groups varied in size (the smallest with six girls, and the largest with 20 girls) and were formed based on convenience, but the procedure for each group was standardized. The teacher created a WhatsApp private text message thread for each social media fast group, where all information was shared. Girls were given the start and end time and date for their fast (all social media fasts began on a Thursday at 9:00 am and ended on a Sunday at 9:00 am) and instructed to complete the pre-fast survey before the start time. Once participants completed the pre-fast survey, they were given the following Tips for Success: "For less temptation and a higher success delete ALL of your social media apps OR move them to a folder on your phone in an area you will not see. They are free to reinstall. This includes Instagram, Snapchat, YouTube, Facebook, Pinterest, Twitter, etc." Following the Tips for Success, all participants on the WhatsApp thread then were urged to "Please check in at least once a day with an update on what

Table 1
Zero-Order Correlations between Central Variables (Body Surveillance, Body Shame, Self-Compassion, Self-Esteem) at T1 and T2.

	1	2	3	4	5	6	7	8
1. T1 Body Surveillance	1.00	0.71***	-0.44*	-0.52*	0.74***	0.61***	-0.08	-0.11
2. T1 Body Shame	0.58**	1.00	-0.41*	-0.58**	0.71***	0.74***	-0.03	-0.32
3. T1 Self-Compassion	-0.32*	-0.61***	1.00	0.79***	-0.34	-0.44**	0.66***	0.62***
4. T1 Self-Esteem	-0.32*	-0.65***	0.87***	1.00	-0.53**	-0.59***	0.57***	0.71***
5. T2 Body Surveillance	0.62***	0.25	-0.08	-0.10	1.00	0.79***	-0.25	-0.41*
6. T2 Body Shame	0.51**	0.76***	-0.39*	-0.52**	0.58***	1.00	-0.41*	-0.64***
7. T2 Self-Compassion	-0.25	-0.36*	0.70***	0.74***	-0.41**	-0.46**	1.00	0.74***
8. T2 Self-Esteem	-0.25	-0.45**	0.66***	0.80***	-0.32*	-0.60***	0.82***	1.00

Note. * $p < .05$; ** $p < .01$; *** $p < .001$
Note. Younger teens are above the diagonal and Older teens are below the diagonal.

you are doing instead of social media, and how you are feeling about the fast."

Throughout the course of the three days, participants posted comments. Teachers reminded girls who were not posting to do so. At the end of the third day, participants were told the fast would end the following morning and were sent reminders to complete the post-fast survey until they had done so, for five days.

2.4. Open-ended coding

Thematic analysis was used to code the text of participants' WhatsApp posts (Braun & Clarke, 2006). An inductive approach was used in which themes emerged from the data in a bottom-up process rather than a deductive approach in which prior research or theory guides the development of themes in a top-down process. The first and second authors developed a coding scheme by: (a) reading all responses closely to identify recurring ideas; (b) forming specific themes based on recurring concepts; and (c) defining themes in a coding manual (see Table 2). After a training period, two independent undergraduate coders (*n* = 2 European American women) classified participants' posts using the coding scheme. Responses were coded for the presence (1) or absence (0) of each theme. A response could contain multiple themes, for example, a post about one's mental state during the fast could also contain a lesson learned from the fast. Discrepancies in coding were resolved through discussion among the coders and the second author. A final decision was jointly reached based on these discussions. Inter-rater reliability between coders ranged from acceptable to good across themes (κs =0.61–0.83). Specific kappas for each theme are listed in Table 2.

3. Results

3.1. Data analysis overview

To test our hypotheses, we first examined the effects of age and the intervention (Time 1 vs. Time 2) on body surveillance and body shame (Hypotheses 1–4). We then assessed self-esteem and self-compassion as possible mechanisms for the effects of the intervention using mediational analyses (Hypotheses 5 and 6). Finally, we coded the text responses that participants posted reflecting on their experiences with the fast, and identified qualitative themes that emerged.

3.2. Preliminary analyses

Participants were divided into two age groups: 31 participants were in the Younger group (ages 10–14), and 34 participants were in the Older group (ages 15–19). At Time 1, as predicted, there were significant differences between the Younger and Older groups on all four variables of interest. A Bonferroni correction was applied to account for multiple comparisons (Shaffer, 1995). The resulting alpha

to determine significance was.0125. Younger teens had significantly lower Time 1 body surveillance (*M* = 3.74, *SD* = 1.16) than Older teens (*M* = 4.91, *SD* =0.98), *t*(63) = −4.55, *p* < .001. Younger teens also had significantly lower Time 1 body shame (*M* = 2.97, *SD* = 1.12) than Older teens (*M* = 3.75, *SD* = 1.23), *t*(63) = −2.50, *p* = .012. Younger teens had higher Time 1 self-esteem (*M* = 2.84, *SD* =0.96) than Older teens (*M* = 2.58, *SD* =0.98), however this difference did not meet criterion based on the Bonferroni correction: *t*(63) = 2.04, *p* = .044. Younger teens had significantly higher Time 1 self-compassion (*M* = 3.11, *SD* = 1.19) than Older teens (*M* = 2.55, *SD* = 1.12), *t*(63) = 3.29, *p* = .002. At both Time 1 and Time 2 all four variables of interest were correlated significantly, and in the predicted directions, in both Age Groups (see Table 1).

3.3. Pre-post analyses

Two repeated measures analyses of variance with Age Group as the between-participants factor and Time as the within-participants factor on the two dependent variables of body surveillance and body shame were performed. A Bonferroni correction was applied to account for multiple comparisons (Shaffer, 1995). The resulting alpha to determine significance was.025. See Fig. 1 for a summary of the following results.

A significant within-participants effect of time was found for body surveillance, $F(1, 63) = 44.324$, $p < .001$, $\eta_p^2 = .41$,[3] with participants reporting significantly lower body surveillance at Time 2 (*M* = 3.67, *SD* = 1.18) than at Time 1 (*M* = 4.39, *SD* = 1.24). As well, a significant between-participants effect of Age Group was also found, $F(1,63) = 20.80$, $p < .001$, $\eta_p^2 = .24$. The Younger group had significantly lower body surveillance than the Older group at both times (*M* = 3.44, *SD* = 1.17 vs *M* = 4.56, *SD* =0.98). There was no significant interaction between Age Group and Time on body surveillance, $F(1, 63) = 1.32$, *ns*, $\eta_p^2 = .02$, indicating that both age groups had significant decreases in body surveillance from Time 1 to Time 2.

A significant within-participants effect of time was found for body shame, $F(1, 63) = 41.89$, $p < .001$, $\eta_p^2 = .40$, with participants reporting significantly lower body shame at Time 2 (*M* = 2.71, *SD* = 1.13) than at Time 1 (*M* = 3.43, *SD* = 1.35). As well, a significant between-participants effect of Age Group was also found, $F(1,63) = 9.61$, $p = .003$, $\eta_p^2 = .13$. The Younger group had significantly lower body shame than the Older group at both times (*M* = 2.63, *SD* = 1.10 vs *M* = 3.47, *SD* = 1.24). There was no significant interaction between Age Group and Time on body shame, $F(1, 63) = 0.23$, *ns*, $\eta_p^2 = .004$,

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[3] η_p^2 is an effect size measure that represents the proportion of the variability in the dependent variable explained by the independent variable, controlling for the other independent variables in the model. Effect sizes should always be interpreted within the context of methodology and findings from similar other studies; however, 0.0099 has been proposed as a blanket threshold for a "small" effect, 0.0588 as a "medium" effect, and .1379 as a "large" effect (Richardson, 2010).
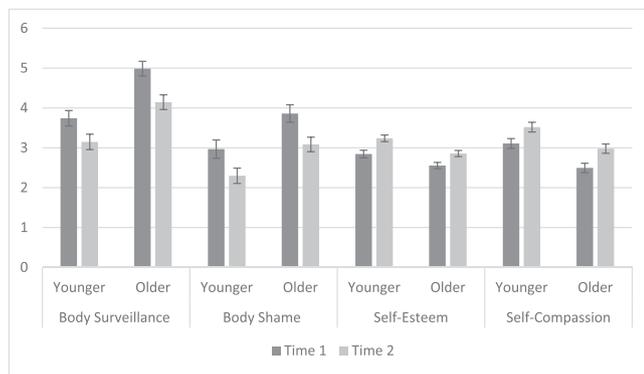
Fig. 1. *Significant Effects of the Intervention on All Variables for Both Younger and Older Teens. Note.* Error bars represent standard errors. Body surveillance and shame scale ranges 1–7, self-esteem ranges 1–4, and self-compassion ranges 1–5.

indicating that both Age groups had significant decreases in body shame from Time 1 to Time 2.

3.4. Mediation analyses

To test the hypothesis that self-esteem and/or self-compassion would mediate the effect of the intervention on body attitudes, we used a path analysis approach by Montoya and Hayes (2017), for estimating the indirect effect of a within-participant manipulation on outcomes through mediators. In our case, the within-participant manipulation was our social media fast intervention, the mediators were self-esteem and self-compassion, and the outcomes were body surveillance and body shame. Thus, we tested two path models (one for each outcome) using the MEMORE v2.1 macro (Montoya & Hayes, 2017) with 5000 bootstrapped samples. The mediation analyses were not split by age because there was no theoretical reason to suspect that age would moderate the predicted indirect effect and this split would have resulted in relatively small samples for analysis.

Time had a significant indirect effect on body surveillance via self-compassion, $b = -0.283$, 95% CI $[-0.489, -0.083]$, but not via self-esteem, $b = -0.201$, 95% CI $[-0.518, 0.089]$. Participants increased in self-compassion from Time 1 to Time 2, which in turn predicted a decrease in their body surveillance. After accounting for indirect effects, time did not have a direct effect on surveillance, $b = -0.235$, $t(65) = -1.78$, $p = .08$. See Fig. 2 for the path diagram of this model.

Time had significant indirect effects on body shame via both self-esteem, $b = -0.283$, 95% CI $[-0.542, -0.044]$, and self-compassion, $b = -0.335$, 95% CI $[-0.551, -0.146]$. Thus, increases in both self-compassion and self-esteem from Time 1 to Time 2 predicted a decrease in body shame. After accounting for indirect effects, time did not have a direct effect on body shame, $b = -0.086$, $t(65) = -1.78$, $p = .48$. See Fig. 2 for the path diagram for this model.

3.5. Qualitative Themes

We content coded the text of posts to the WhatsApp group thread. Participants made zero to three posts per day for three days (M total = 2.81, SD = 1.39; range total = 1–7). One participant did not make any posts. All of the posts a participant made were collapsed and coded as one unit. That is, the content across all of an individual's posts was coded for the presence/absence of each theme; thus, frequency counts reflect the number of participants who made a statement reflecting a particular theme. See Table 2 for frequencies of each theme. Below representative quotations by theme are presented.

3.5.1. Heightened connection

(25.0%, $n = 16$). Example statements that illustrate the heightened connection theme include "I actually went out and did things with my friends and family and it was amazing" and "went out for lunch with my friends today we actually talked and didn't go on our phones."

3.5.2. Self-care behaviors

(25.0%, $n = 16$). Example statements of self-care behaviors include "i took a nap after school:)" and "I took a nice walk by myself".

3.5.3. Time displacement

(59.4%, $n = 38$). Participants reported engaging in a range of other activities instead of being on social media including, for example, reading, playing music, playing a sport, baking, doing their homework or studying for an exam, and doing chores such as laundry or cleaning their room.

3.5.4. Being present

(29.7%, $n = 19$). Example statements that reflect the being present theme include "i went to a concert and i was able to be more in the moment w/o being distracted by my phone!:))" and "I [am] finally paying attention to my surroundings when I am bored."

3.5.5. Mental states

(45.3%, $n = 29$). Example statements that illustrate the mental states theme include "I feel refreshed for sure! I don't feel as anxious" and "I feel generally taking a break from social media is making me feel a lot calmer and more centered… it also creates a kind of space in my mind, sort of like when you meditate, that just makes me feel a lot lighter and more focused, less cluttered and busy. You know?" All of the statements coded for this theme described positive mental state(s), e.g., calmer, less anxious, more focused.

3.5.6. Upsides

(37.5%, $n = 24$). Example statements of the upsides theme include "I had dinner with my family tonight and wasn't worried about checking my phone the whole time" and "it's…sort of [a] relief to not have to reply to snapchats and worry about what everyone else is doing."

3.5.7. Downsides

(15.65%, $n = 10$). Example statements that reflect the downsides theme include "I just got home, and I found that the times I'm usually on social media I feel like there's nothing to do- also that I'm missing out on something. I play games on my phone instead, just kinda gives me an empty feeling" and "It [is] so hard not to go on social thing all my friends posted pic of us today at the trip."

3.5.8. Lesson learned

(32.8%, $n = 21$). Example statements that illustrate the lesson learned theme include "By doing this I've realized that I want to spend my life more present in my surroundings and not in the world of social media…" and "overall I love all my free time and that I get to do meaningful and productive things[.] I will be using a lot less social media in the future."

3.5.9. Overall

Whereas posts were coded into multiple themes in the above findings, the following quotation encompasses multiple themes that were present in many participants' posts and is presented here as an exemplar reflection by a participant.

"I think doing this fast has really been a great experience for me. Even though at some points, I will admit, I wanted to go on Snapchat or Instagram and see what all my friends were doing, i think taking this break to clear my mind and focus on myself has been beneficial. I feel more connected to myself and less concerned about what other people are doing or whether I was invited to something or whatever it may be. In
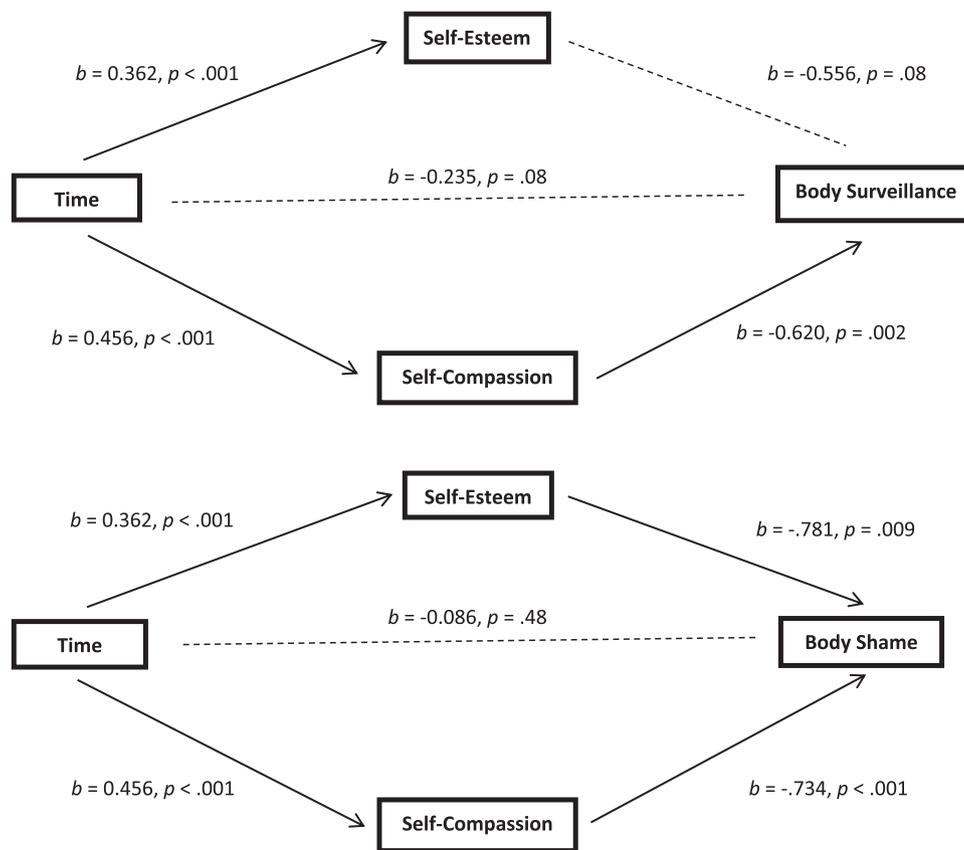
Fig. 2. *Path Models for the Effects of Time on Body Surveillance and Body Shame through Self-Compassion and Self-Esteem. Note.* Coefficients are unstandardized. Dashed line indicates non-significant path ($p > .05$).

Table 2
Themes and frequencies for open-ended responses.

Theme	Kappa	Definition	Frequency n/%
Heightened connection	0.76	Statements about spending time/connecting with other people one is close to including friends and family	16/25.0%
Self-care behaviors	0.83	Statements about engaging in deliberate activities to take care of one's physical (e.g., take a nap) or mental (e.g., relax) health	16/25.0%
Time displacement	0.81	Statements about engaging in hobbies, activities, chores (rather than being on social media)	38/59.4%
Being present	0.75	Statements about being more aware of one's surrounding; paying more attention to one's surroundings; being engaged with people in the moment; living in the moment	19/29.7%
Mental states	0.81	Statements about one's inner mental state	29/45.3%
Upsides	0.76	Positive statements about not being on social media	24/37.5%
Downsides	0.61	Negative statements about not being on social media	10/15.65%
Lesson learned	0.72	Statements about what one has learned about one's self during the fast	21/32.8%

a way, i feel less reliant on social media. I feel like before I would always turn to YouTube or Instagram or something if I were ever bored or if I had nothing to do ect [sic]. Because of this fast I haven't been able to do that, so I've had to find ways to entertain myself. I discovered new things that make me happy and hobbies and different things that I really enjoy. I didn't spend all my time at home watching YouTube videos and I actually went out and did things with my friends and family and it was amazing. For me personally, I won't completely be off social media after this fast but I think I definitely will re-evaluate how much time and energy I spend on it! I would definitely recommend this fast to people because it's a great experience!!."

4. Discussion

Multiple content analyses have documented that a narrow beauty standard (i.e., very thin, highly fit) is pervasive on social media (e.g.,

Talbot et al., 2017) and several meta-analyses have demonstrated that SNS usage is negatively related to body image (Huang et al., 2021; Mingoia et al., 2017; Saiphoo & Vahedi, 2019). As such, finding ways to alleviate the impacts of social media on adolescents is a pressing social need. Educators and mental health professionals have developed school-based social media prevention programs for youth aimed at mitigating possible negative effects of social media on body image (e.g., McLean et al., 2017). However, such programs are not common or widespread in U.S. schools. As a result, we tested a cost-free intervention – a brief social media fast carried out in small groups – that parents, dance teachers, coaches, and other youth group leaders can implement with their own adolescents or youth in their programs. We expected that levels of self-objectification would drop from pre- to post-fast and that changes in self-compassion and self-esteem during the fast would mediate these changes. Overall, our hypotheses were supported, as explained below.

Objectification theory proposed that the tendency to view oneself as an object (i.e., to self-objectify) is engendered by the interpersonal and cultural ubiquity of the gaze of others on the female body (Fredrickson & Roberts, 1997). In this novel experimental study, the gaze from social media engagement was temporarily removed through a brief social media fast. As expected, girls reported less body surveillance and less body shame from pre- to post-fast. It seems, then, that a relatively brief period of abstinence from social media can be beneficial for adolescent girls' body perceptions, especially among older teens. These results are particularly important given that self-objectification is known to increase across adolescence in girls (Daniels et al., 2020). Importantly, given previous research showing that simply abstaining from SNS use on an individual basis can actually increase loneliness and negative affect (e.g., Sheldon et al., 2011; Vally & D'Souza, 2019), the girls in this study participated in small groups, likely affording them a feeling of social connection during the fast.

The positive effect of the fast on self-objectification was explained by increases in self-esteem and self-compassion during the fast. These findings are consistent with prior intervention research that has found support for the role of these constructs in promoting positive embodiment (Sundgot-Borgen et al., 2020) and improving appearance esteem (Rodgers et al., 2018). Self-compassion may be an especially useful buffer against self-objectification because it involves recognizing that humans share many life experiences, for example, feeling inadequate sometimes, and responding to these feelings with acceptance (Neff & Vonk, 2009). Individuals higher in self-compassion may be better equipped to appreciate their body as unique and engage in less social comparison (Berry et al., 2010). We also found that self-esteem may be protective against self-objectification. However, we regard this finding as speculative because it is possible that the inclusion of self-image relevant topics in the dance workshop curriculum itself may have had a positive impact on participants' self-esteem. Therefore, it is not clear whether the workshop or the fast or the combination of the two affected this change in self-esteem. Further research is needed to better understand the exact nature of this finding. Together, the mediational findings indicate that time away from SNSs and concurrent connection to other girls also taking a break from SNSs allowed for increases in self-esteem and self-compassion during the fast; these more positive self-perceptions were, in turn, related to reduced self-objectification. These results illustrate the importance of targeting broader aspects of the self in body image interventions.

This study focused on dancers given the prominent role of SNSs in this gaze-centered activity. Social media platforms provide a means through which dancers can reach large audiences and break into the dance industry (Easter, 2020), and, as a result, have become important tools for building one's career as a dancer (Kaiser, 2017). However social media can also trigger body concerns among dancers according to reports from dancers themselves (Rizzuto, 2019), and dancers are at considerably higher risk for eating disorders compared to non-dancers (Arcelus et al., 2014). Thus, examining ways to alleviate appearance pressures from social media on female adolescent dancers is especially important. Our findings suggest that dancers could meaningfully benefit from brief social media fasts as a means to reduce self-objectification. In addition, our qualitative findings indicate that participants experienced a number of other positive effects that we had not predicted a priori.

Our content analysis of the messages girls posted to their group's WhatsApp thread indicated that the fast allowed for experiences associated with positive embodiment. Almost half of the participants reported experiencing more positive mental states including less anxiety, greater sense of calm, and being more focused. Similarly, almost a third of participants reported feeling more present in their daily lives, for example, paying attention in the moment to an activity or event, and a quarter of participants reported engaging in self-care behaviors.

All three of these themes reflect aspects of embodiment which Piran and Teall (2012) define as the "experience of engagement of the body with the world" (p. 169).

According to Piran and Teall's developmental theory of embodiment (2012), as girls mature from childhood into adolescence they move from a position of subjectivity with respect to their body and the world, to a position in which this subjectivity is eclipsed by cultural expectations regarding beauty ideals they feel compelled to meet. As Fredrickson and Roberts (1997) proposed, this is when girls may begin to internalize the external gaze and monitor and scrutinize their body for compliance with external standards for appearance (i.e., engage in self-objectification). Participants' reports, while escaping the gaze for three days, of positive mental states, being present, and taking care of their physical and mental health reflect connection to (rather than alienation from) their body. This is consistent what Piran and Teall call "inhabiting the body as a subjective site" (Piran, 2019, p. 12).

Being embodied stands in contrast to self-objectification which disrupts embodiment. Indeed, in scale development work, Piran et al., (2020) found that embodiment is associated with lower body surveillance as well lower eating disordered attitudes, lower alexithymia (i.e., deficits in understanding, processing, or describing emotions), lower depression, and higher body and self-esteem. From their significantly reduced levels of body surveillance and body shame as well as from the themes reflected in their group posts, it appears that the social media fast allowed these participants the opportunity to experience positive embodiment and resist self-objectification.

Participants also reported that they learned about themselves (i.e., 'lessons learned' theme) during the fast. This pattern is consistent with theorizing that positive emotions, such as those reported in the mental states theme, allow individuals to broaden their attention and cognition, thereby building personal resources (Fredrickson, 2001). The mechanism thought to explain these patterns is that positive emotions serve as a catalyst for so-called 'upward spirals' of well-being. Reschly et al. (2008) found empirical evidence for this theorizing in a longitudinal study of U.S. youth in grades 7–10. Youth who reported more frequent positive emotions during school demonstrated higher school engagement, whereas those who reported more negative emotions during school demonstrated less school engagement. The positive mental states participants in the present study reported during the fast seemed to provide an opportunity for personal growth and the opportunity to reflect on and learn about the self.

Taken together, the quantitative and qualitative results indicate that the brief social media fast provided participants relief from the ubiquitous objectifying gaze, thereby reducing their tendency to self-objectify. This reduction in self-objectification likely allowed participants the opportunity to subjectively experience their body, or be positively embodied, and learn about themselves.

4.1. Limitations and future directions

Like all studies, the present study has limitations that should be acknowledged. First, this study had a naturalistic design and used a convenience sample of teens who agreed to participate in a social media fast. The dancers were attendees of workshops at studios and conventions and the social media fast was an element of the workshop curriculum. Accordingly, the first three authors had no control over the number of participants, their demographic backgrounds, or the size of each group for daily check-ins. Future research should include a more ethnically/racially diverse sample and standardize the size of the group for daily check-ins. Even so, however, youth who agree to participate in study involving a social media fast likely differ from youth would not participate in such a study.

Second, the group thread for daily check-ins was intended to mitigate the negative effect of social media abstinence on social connection found in prior research (e.g., Sheldon et al., 2011; Vally & D'Souza, 2019), giving the girls a social cohort with whom to feel

included via private, group text messaging during the fast. However, given the design of the study, the authors have no knowledge as to whether participants knew other members of their group thread prior to the fast or not. In addition, no measure of social loneliness was included in the survey. Therefore, it is unclear whether, or the extent to which, participants experienced negative affect from a lack of social connection during the fast. The qualitative data in the 'downsides' theme suggest that a small number of participants did indeed experience social loneliness during the fast. Future research should improve upon this limitation, perhaps by including groups of friends in a fast, and including a measure of social loneliness. Furthermore, future research should aim to assess the effects of the fast separately from the effects of the group chat to understand the relative contributions of each to the changes demonstrated. It is possible that the fast or the group chat, or the combination of the two, produced the significant effects reported here. More research with a true experimental design is needed to study these possibilities.

Third, participants were all dancers. Future research should include a wider swath of adolescent girls to see if findings replicate with other girls, and across other extra-curricular activities. Fourth, there was no check (e.g., screen time log from cellphone) of whether participants actually abstained from social media during the fast. It is possible that some may not have, although the qualitative data indicate girls were, in fact, adhering to the fast. Fifth, although girls were nested within WhatsApp groups, we did not match their group membership to their data in order to protect their privacy. Therefore, we are unable to account for this violation of independence statistically. Sixth, although our model posits that self-esteem and self-compassion mediate the relationship between the fast and self-objectification measures, we measured the mediators and outcomes simultaneously. Therefore, it is plausible that self-objectification actually mediates the effect of the fast on self-esteem and self-compassion, and future research should address this possibility. Finally, future research should include a follow-up assessment to determine whether the positive effects found immediately post-fast are sustained weeks or months later.

5. Conclusion

Our findings suggest that a brief break from social media, coupled with a daily check-in to a group of peers also taking a break, may be effective in ameliorating self-objectification and promoting embodiment in adolescent girls. Even just three days of non-engagement with social media appears to have enhanced girls' self-compassion, and these boosts, in turn, had positive impacts on their body image, mitigating their body surveillance and body shame. As well, and remarkably, their self-esteem also saw an uptick during the fast, and this predicted a decrease in body shame. The comments participants posted to their group chat threads show that taking a break may improve girls' mental states, provide opportunities to reflect on the role of social media in their lives, and allow them to be more present in their daily lives. Encouraging temporary breaks from social media among peer groups of girls may be an especially promising direction for future research and intervention.

CRediT authorship contribution statement

Tomi-Ann Roberts: Conceptualization, Methodology, Investigation, Project administration, Formal analysis, Data curation, Writing – original draft, Writing – review & editing, Supervision. **Elizabeth A. Daniels:** Formal analysis, Data curation, Writing – original draft, Writing – review & editing, Supervision. **Jason M. Weaver:** Software, Formal analysis, Writing – review & editing. **Leslie Scott Zanovich:** Conceptualization, Investigation, Resources, Project administration.

Conflict of interest

No authors have Conflicts of Interests or Interests to Declare.

References

Adams, K. E., Tyler, J. M., Calogero, R., & Lee, J. (2017). Exploring the relationship between appearance-contingent self-worth and self-esteem: The roles of self-objectification and appearance anxiety. *Body Image, 23*, 176–182. https://doi.org/10.1016/j.bodyim.2017.10.004

Alleva, J. M., Sheeran, P., Webb, T. L., Martijn, C., & Miles, E. (2015). A meta-analytic review of stand-alone interventions to improve body image. *PloS ONE, 10*(9), https://doi.org/10.1371/journal.pone.0139177

Arcelus, J., Witcomb, G. L., & Mitchell, A. (2014). Prevalence of eating disorders amongst dancers: A systemic review and meta-analysis. *European Eating Disorders Review, 22*(2), 92–101. https://doi.org/10.1002/erv.2271

Barthorpe, A., Winstone, L., Mars, B., & Moran, P. (2020). Is social media screen time really associated with poor adolescent mental health? A time use diary study. *Journal of Affective Disorders, 274*, 864–870. https://doi.org/10.1016/j.jad.2020.05.106

Bell, B. T., Taylor, C., Paddock, D., & Bates, A. (2021). Digital bodies: A controlled evaluation of a brief classroom-based intervention for reducing negative body image among adolescents in the digital age. e12449-e12449 *British Journal of Educational Psychology.* https://doi.org/10.1111/bjep.12449

Berry, K., Kowalski, K. C., Ferguson, L. J., & McHugh, T. F. (2010). An empirical phenomenology of young adult women exercisers' body self-compassion. *Qualitative Research in Sport and Exercise, 2*(3), 293–312. https://doi.org/10.1080/19398441.2010.517035

Brady, K. (2018). How to use social media to help your dance career. *Dance Spirit.* (Retrieved from) https://www.dancespirit.com/how-to-use-social-media-to-help-your-dance-career-2622371620.html.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Cafri, G., Yamamiya, Y., Brannick, M., & Thompson, J. K. (2005). The influence of sociocultural factors on body image: A meta-analysis. *Clinical Psychology: Science and Practice, 12*(4), 421–433. https://doi.org/10.1093/clipsy.bpi053

Chua, T. H. H., & Chang, L. (2016). Follow me and like my beautiful selfies: Singapore teenage girls' engagement in self-presentation and peer comparison on social media. *Computers in Human Behavior, 55*, 190–197. https://doi.org/10.1016/j.chb.2015.09.011

Crandall, R. (1973). The measurement of self-esteem and related constructs. In J. P. Robinson, & P. R. Shaver (Eds.). *Measures of social psychological attitudes* (pp. 45–168). Ann Arbor, MI: Institute for Social Research.

Cunha, M., Xavier, A., & Castilho, P. (2016). Understanding self-compassion in adolescents: Validation study of the Self-Compassion Scale. *Personality and Individual Differences, 93*, 56–62. https://doi.org/10.1016/j.paid.2015.09.023

Dakanalis, A., Timko, A. C., Clerici, M., Riva, G., & Carrà, G. (2017). Objectified body consciousness (OBC) in eating psychopathology: Construct validity, reliability, and measurement invariance of the 24-item OBC Scale in clinical and nonclinical adolescent samples. *Assessment, 24*(2), 252–274. https://doi.org/10.1177/1073191115602553

Daniels, E. A., & Roberts, T.-A. (2018). Programmatic approaches to cultivating positive bodyimage in youth. In E. A. Daniels, M. M. Gillen, & C. H. Markey (Eds.). *Body positive: Understanding and improving body image in science and practice* (pp. 361–405). Cambridge University Press.

Daniels, E. A., Zurbriggen, E. L., & Ward, L. M. (2020). Becoming an object: A review of self-objectification in girls. *Body Image, 33*, 278–299. https://doi.org/10.1016/j.bodyim.2020.02.016

Deighton-Smith, N., & Bell, B. T. (2018). Objectifying fitness: A content and thematic analysis of #fitspiration images on social media. *Psychology of Popular Media Culture, 7*(4), 467–483. https://doi.org/10.1037/ppm0000143

Easter, M. (2020). Rise of the dancefluencer. *Louisiana Times.* https://www.latimes.com/projects/la-social-media-dance-influencer/.

Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7,* 117–140. https://doi.org/10.1177/001872675400700202

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *The American Psychologist, 56*(3), 218–226. https://doi.org/10.1037/0003-066X.56.3.218

Fredrickson, B., & Roberts, T.-A. (1997). Objectification theory: Toward understanding women's lived experiences and mental health risks. *Psychology of Women Quarterly, 21*(2), 173–206. https://doi.org/10.1111/j.1471-6402.1997.tb00108.x

Ghaznavi, J., & Taylor, L. D. (2015). Bones, body parts, and sex appeal: An analysis of #thinspiration images on popular social media. *Body Image, 14*, 54–61. https://doi.org/10.1016/j.bodyim.2015.03.006

Gordon, C. S., Jarman, H. K., Rodgers, R. F., McLean, S. A., Slater, A., Fuller-Tyszkiewicz, M., & Paxton, S. J. (2021). Outcomes of a cluster randomized controlled trial of the SoMe social media literacy program for improving body image-related outcomes in adolescent boys and girls. *Nutrients, 13*(11), 3825. https://doi.org/10.3390/nu13113825

Hall, J. A., Xing, C., Ross, E. M., & Johnson, R. M. (2021). Experimentally manipulating social media abstinence: Results of a four-week diary study. *Media Psychology, 24*(2), 259–275. https://doi.org/10.1080/15213269.2019.1688171

Huang, Q., Peng, W., & Ahn, S. (2021). When media become the mirror: A meta-analysis on media and body image. *Media Psychology, 24*(4), 437–489. https://doi.org/10.1080/15213269.2020.1737545

Kaiser, E. (2017). 5 ways social media can help a dancer's career. *Medium*. https://medium.com/lab-work/5-ways-social-media-can-help-a-dancers-career-fed261d4b249.

Kaufman, S. L. (2019). Janet Jackson hired her as a backup dancer. Instagram made her a star. *The Washington Post*. (Retrieved from) https://www.washingtonpost.com/entertainment/theater_dance/these-dance-influencers-are-taking-center-stage-online/2019/10/17/82bc95f0-ef87-11e9-b2da-606ba1ef30e3_story.html.

Liss, M., & Erchull, M. J. (2015). Not hating what you see: Self-compassion may protect against negative mental health variables connected to self-objectification in college women. *Body Image, 14*, 5–12. https://doi.org/10.1016/j.bodyim.2015.02.006

Markey, C. H., & Daniels, E. A. (2022). Preadolescent girls' social media use and body image: Type of engagement may matter most. *Body Image, 42*, 145–149. https://doi.org/10.1016/j.bodyim.2022.05.005

McKinley, N. M., & Hyde, J. S. (1996). The Objectified Body Consciousness Scale: Development and validation. *Psychology of Women Quarterly, 20*(2), 181–215. https://doi.org/10.1111/j.1471-6402.1996.tb00467

McLean, S. A., Paxton, S. J., & Wertheim, E. H. (2016). The role of media literacy in body dissatisfaction and disordered eating: A systematic review. *Body Image, 19*, 9–23. https://doi.org/10.1016/j.bodyim.2016.08.002

McLean, S. A., Wertheim, E. H., Masters, J., & Paxton, S. J. (2017). A pilot evaluation of a social media literacy intervention to reduce risk factors for eating disorders. *The International Journal of Eating Disorders, 50*(7), 847–851. https://doi.org/10.1002/eat.22708

Mingoia, J., Hutchinson, A. D., Wilson, C., & Gleaves, D. H. (2017). The relationship between social networking site use and the internalization of a thin ideal in females: A meta-analytic review. *Frontiers in Psychology, 8*. https://doi.org/10.3389/fpsyg.2017.01351

Montoya, A. K., & Hayes, A. F. (2017). Two-condition within-participant statistical mediation analysis: A path-analytic framework. *Psychological Methods, 22*(1), 6–27. https://doi.org/10.1037/met0000086

National Health Statistics. (2020). *Trends and patterns in menarche in the United States: 1995 through 2013-2017*. Washington, DC: Centers for Disease Control and Prevention,. https://www.cdc.gov/nchs/data/nhsr/nhsr146-508.pdf.

Neff, K. D. (2003a). Self-compassion: an alternative conceptualization of a healthy attitude toward oneself. *Self and Identity, 2*(2), 85–101. https://doi.org/10.1080/15298860309032

Neff, K. D. (2003b). The development and validation of a scale to measure self-compassion. *Self and Identity, 2*(3), 223–250. https://doi.org/10.1080/15298860309027

Neff, K. D., & Vonk, R. (2009). Self-compassion versus global self- esteem: Two different waysof relating to oneself. *Journal of Personality, 77*(1), 23–50. https://doi.org/10.1111/j.1467-6494.2008.00537.x

Piran, N. (2019). The experience of embodiment construct: Reflecting the quality of embodied lives. In N. Piran, & T. L. Tylka (Eds.). *Handbook of positive body image and embodiment: Constructs, protective factors, and interventions* (pp. 11–19). Oxford University Press.

Piran, N., & Teall, T. L. (2012). The developmental theory of embodiment. In G. McVey, M. P. Levine, N. Piran, & H. B. Ferguson (Eds.). *Preventing eating-related and weight-related disorders: Collaborative research, advocacy, and policy change* (pp. 171–199). Wilfred Laurier Press.

Piran, N., Teall, T. L., & Counsell, A. (2020). The Experience of Embodiment Scale: Development and psychometric evaluation. *Body Image, 34*, 117–134. https://doi.org/10.1016/j.bodyim.2020.05.007

Pullmer, R., Coelho, J. S., & Zaitsoff, S. L. (2019). Kindness begins with yourself: The role of Self-compassion in adolescent body satisfaction and eating pathology. *The International Journal of Eating Disorders, 52*(7), 809–816. https://doi.org/10.1002/eat.23081

Reschly, A. L., Huebner, E. S., Appleton, J. J., & Antaramian, S. (2008). Engagement as flourishing: The contribution of positive emotions and coping to adolescents' engagement at school and with learning. *Psychology in the Schools, 45*(5), 419–431. https://doi.org/10.1002/pits.20306

Richardson, J. T. E. (2010). Eta squared and partial eta squared as measures of effect size in educational research. *Educational Research Review, 6*, 135–147. https://doi.org/10.1016/j.edurev.2010.12.001

Rideout, V., & Robb, M. B. (2019). *The Common Sense census: Media use by tweens and teens, 2019*. San Francisco, CA: Common Sense Media.

Rizzuto, R. (2019, 22). When social media triggers body image issues. *Dance Magazine*. https://www.dancemagazine.com/social-media-body-image/.

Rodgers, R. F., Paxton, S. J., McLean, S. A., & McLean, S. A. (2014). A biopsychosocial model of body image concerns and disordered eating in early adolescent girls. *Journal of Youth and Adolescence, 43*(5), 814–823. https://doi.org/10.1007/s10964-013-0013-7

Rodgers, R. F., Donovan, E., Cousineau, T., Yates, K., McGowan, K., Cook, E., Lowy, A. S., & Franko, D. L. (2018). BodiMojo: Efficacy of a mobile-based intervention in improving body image and self-compassion among adolescents. *Journal of Youth and Adolescence, 47*, 1363–1372. https://doi.org/10.1007/s10964-017-0804-3

Rodgers, R. F., Slater, A., Gordon, C. S., McLean, S. A., Jarman, H. K., & Paxton, S. J. (2020). A biopsychosocial model of social media use and body image concerns,

disordered eating, and muscle-building behaviors among adolescent girls and boys. *Journal of Youth and Adolescence, 49*(2), 399–409. https://doi.org/10.1007/s10964-019-01190-0

Rosenberg, M. (1965). *Society and the Adolescent Self-image*. Princeton, NJ: Princeton University Press.

Saiphoo, A. N., & Vahedi, Z. (2019). A meta-analytic review of the relationship between social media use and body image disturbance. *Computers in Human Behavior, 101*, 259–275. https://doi.org/10.1016/j.chb.2019.07.028

Shaffer, J. P. (1995). Multiple hypothesis testing. *Annual Review of Psychology, 46*, 561–584. https://doi.org/10.1146/annurev.ps.46.020195.003021

Shapiro, L. A. S., & Margolin, G. (2014). Growing up wired: Social networking sites and adolescent psychosocial development. *Clinical Child and Family Psychology Review, 17*(1), 1–18. https://doi.org/10.1007/s10567-013-0135-1

Sheldon, K. M., Abad, N., & Hinsch, C. (2011). A two-process view of Facebook use and relatedness need-satisfaction: Disconnection drives use, and connection rewards it. *Journal of Personality and Social Psychology, 100*(4), 766–775. https://doi.org/10.1037/a0022407

Sicilia, A., Alcaraz-Ibáñez, M., Granero-Gallegos, A., Lirola, M.-J., & Burgueño, R. (2020). Psychometric properties of the Objectified Body Consciousness Scale (OBCS) in Spanish preadolescents. *Sex Roles: A Journal of Research, 82*(3–4), 241–251. https://doi.org/10.1007/s11199-019-01043-x

Subrahmanyam, K., & Šmahel, D. (2011). *Digital youth: The role of media in development*. Springer.

Sundgot-Borgen, C., Stenling, A., & Bratland-Sanda, S. (2020). The Norwegian healthy body image intervention promotes positive embodiment through improved self-esteem. *Body Image, 35*, 84–95. https://doi.org/10.1016/j.bodyim.2020.08.014

Talbot, C. V., Gavin, J., van Steen, T., & Morey, Y. (2017). A content analysis of thin-spiration, fitspiration, and bonespiration imagery on social media. 40-40 *Journal of Eating Disorders, 5*(1), https://doi.org/10.1186/s40337-017-0170-2

Tiggemann, M., & Slater, A. (2001). A test of objectification theory in former dancers and non-dancers. *Psychology of Women Quarterly, 25*(1), 57–64. https://doi.org/10.1111/1471-6402.00007

Tiggemann, M., & Slater, A. (2013). Netgirls: The internet, facebook, and body image concern in adolescent girls. *The International Journal of Eating Disorders, 46*(6), 630–633. https://doi.org/10.1002/eat.22141

Tiggemann, M., & Slater, A. (2014). Nettweens: The internet and body image concerns in preteenage girls. *The Journal of Early Adolescence, 34*(5), 606–620. https://doi.org/10.1177/0272431613501083

Tiggemann, M., & Zaccardo, M. (2018). 'Strong is the new skinny': A content analysis of #fitspiration images on Instagram. *Journal of Health Psychology, 23*(8), 1003–1011. https://doi.org/10.1177/1359105316639436

Turel, O., Cavagnaro, D. R., & Meshi, D. (2018). Short abstinence from online social networking sites reduces perceived stress, especially in excessive users. *Psychiatry Research, 270*, 947–953. https://doi.org/10.1016/j.psychres.2018.11.017

Twenge, J. M., Joiner, T. E., & Rogers, M. L. (2017). Increases in depressive symptoms, suicide-related outcomes, and suicide rates among U.S. adolescents after 2010 and links to increased new media screen time. *Clinical Psychological Science, 6*(1), 3–17. https://doi.org/10.1177/2167702617723376

Underwood, M. K., Brown, B. B., & Ehrenreich, S. E. (2018). Social media and peer relations. In W. M. Bukowski, B. Laursen, & K. H. Rubin (Eds.). *Handbook of peer interactions, relationships, and groups.* (pp. 533–551). (2nd ed.,). The Guilford Press.

Vally, Z., & D'Souza, C. G. (2019). Abstinence from social media use, subjective well-being, stress, and loneliness. *Perspectives in Psychiatric Care, 55*(4), 752–759. https://doi.org/10.1111/ppc.12431

van den Berg, P. A., Mond, J., Eisenberg, M., Ackard, D., & Neumark-Sztainer, D. (2010). The link between body dissatisfaction and self-esteem in adolescents: Similarities across gender, age, weight status, race/ethnicity, and socioeconomic status. *Journal of Adolescent Health, 47*(3), 290–296. https://doi.org/10.1016/j.jadohealth.2010.02.004

Wang, S. B., Haynos, A. F., Wall, M. M., Chen, C., Eisenberg, M. E., & Neumark-Sztainer, D. (2019). Fifteen-year prevalence, trajectories, and predictors of body dissatisfaction from adolescence to middle adulthood. *Clinical Psychological Science, 7*(6), 1403–1415. https://doi.org/10.1177/2167702619859331

Wick, M. R., & Harriger, J. A. (2018). A content analysis of thinspiration images and text posts on Tumblr. *Body Image, 24*, 13–16. https://doi.org/10.1016/j.bodyim.2017.11.005

Wilksch, S. (2019). Media literacy interventions to facilitate positive body image and embodiment. In N. Piran, & T. L. Tylka (Eds.). *Handbook of positive body image and embodiment: Constructs, protective factors, and interventions*. Oxford University Press.

Wollast, R., Riemer, A. R., Bernard, P., Leys, C., Kotsou, I., & Klein, O. (2019). How self-compassion moderates the effect of body surveillance on subjective happiness and depression among women. *Scandinavian Journal of Psychology, 60*(5), 464–472. https://doi.org/10.1111/sjop.12553

Zheng, D., Ni, X., & Luo, Y. (2019). Selfie posting on social networking sites and female adolescents' self-objectification: The moderating role of imaginary audience ideation. *Sex Roles, 80*(5–6), 325–331. https://doi.org/10.1007/s11199-018-0937-1