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This is the Published version of the following publication

McLean, Sian, Jarman, HK and Rodgers, RF (2019) How do “selfies” impact adolescents' well-being and body confidence? A narrative review. *Psychology Research and Behavior Management*, 12. pp. 513-521. ISSN 1179-1578

The publisher's official version can be found at
<https://www.dovepress.com/how-do-selfies-impact-adolescents-well-being-and-body-confidence-peer-reviewed-article-PRBM>

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How do “selfies” impact adolescents' well-being and body confidence? A narrative review

This article was published in the following Dove Press journal:
Psychology Research and Behavior Management

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Abstract: Social media use has grown rapidly in recent years, with one of the most popular activities for young people being the taking, sharing, and browsing of digital self-photos, known as selfies. However, research has only recently begun to investigate selfies, and little is known about selfie practices in adolescents, or the associations between these practices and well-being and body confidence. This paper aimed to address this gap and conduct a narrative review of selfie practices and the relationships with well-being and body confidence in adolescents. No studies were found reporting on selfie practices and these relationships among children. However, taking selfies appears to be common practice among adolescents, although posting selfies online is less frequent. The studies reviewed indicate that certain aspects of selfie behaviors may be more problematic than others. Specifically, viewing selfies online appears to have a negative impact on adolescents' well-being and body confidence, at least in the short term in experimental contexts. Moreover, seeking and placing importance on feedback from others may also be a harmful aspect of selfie practices. Finally, consistent with research examining social media, social comparison has been identified in this emerging body of research as a potential mechanism which links selfie engagement to well-being and body confidence. To further advance understanding of the correlates and effects of selfie practices, research with children and with boys, and research focused on a wider range of indicators of well-being, is needed. Most importantly, prospective research is required to examine the directionality of links between selfie practices and well-being and body confidence.

Keywords: selfies, social media, adolescents, well-being, body image, social comparison

Introduction

Social media use among young people has burgeoned in recent years,^{1,2} with a doubling of the proportion of teenagers who use social media reported over a 6-year period.³ One of the most popular activities is sharing and viewing selfies.^{4,5} Selfies are typically defined as self-photos taken with a hand-held device that are usually shared on social media.⁶ However, more recent definitions also recognize the centrality of the photographer in the image, in that the body or face is the main focus of the image, and incorporate the notion that selfies are “consciously created, modified, and shared with others to varying degrees”.⁷ This extended conceptualization recognizes multiple actions involved in taking (preparation, staging, posing), modifying (editing, selection), and posting photos, as well as viewing (browsing) and evaluating others' selfies through “likes” and comments as being encompassed under the umbrella of selfie-related practices.^{8,9} Despite the popularity of selfie practices on social media, in light of emerging evidence of harms associated with

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social media use,^{10–12} including among children, showing a link between social media use and poorer psychological functioning, depression, and body dissatisfaction,^{13–15} increasing our understanding of the association between different types of social media use and outcomes in children is important. In particular, young people's recognition of the negative impact of photo-sharing social media platforms on well-being and body image¹⁶ highlights selfie practices as an important area of investigation. Increasing our understanding of these effects in adolescents is particularly important, as this is a significant developmental period for identity, self-image, and social interactions, all of which are likely to be impacted by selfie practices. This article reviews research that has examined the relationships between, and impact of, selfie practices on adolescents' well-being and body confidence, with the aim of providing a narrative summary of these effects and suggestions for future priorities for research in this area.

Owing to the relatively recent uptake of selfie practices, the impact of selfies has only recently become the subject of scientific studies.¹⁷ Furthermore, relatively few selfie studies have focused on adolescents and, to our knowledge, no studies have been published that have examined this topic in children. This is despite the fact that social media platforms that have as their primary purpose sharing and browsing photos, such as Instagram and Snapchat, are particularly favored by young people.² In light of the small body of research examining selfies in adolescents, this paper will comprise a narrative, rather than systematic, review of the literature. A narrative review was deemed most appropriate because of the limited number of studies in this area, and the fact that the literature that does exist is still formative and in its early stages. In contrast to a systematic review, a narrative review affords a broader scope to provide a comprehensive synthesis of evidence and contextualization of the extant research.¹⁸ Searches of relevant databases and reference lists were conducted to identify relevant papers. The authors determined which articles were most pertinent for this review using their expertise in this field.

The review focused on outcomes related to well-being and body confidence, which are considered to be particularly relevant for adolescents, as these are formative years for the development of self-identity,¹⁹ of which appearance and body image are important components.²⁰ Well-being is traditionally defined as encompassing optimal psychological functioning.²¹ Consistent with this definition, in the current paper, well-being has been conceptualized to focus

specifically on elements of psychological functioning, such as affect and self-esteem. Physical well-being and impact on other domains of functioning important in this developmental phase, such as cognitive development and educational attainment, are considered outside the scope of the paper. In addition, although the focus of this review is on body confidence, considered to reflect positive feelings about one's body, including but not limited to appearance,²² studies that have assessed other related outcomes, including body satisfaction, and indicators of low body confidence, body dissatisfaction, and self-objectification, will also be considered.

Selfie practices

Emerging research suggests that children and adolescents engage with a range of selfie practices, although less is known about the frequency of engagement with selfies than with social media use more generally. For example, a 2018 report indicates that the most popular social media platforms for adolescents are YouTube, Instagram, and Snapchat, with between 69% and 85% of adolescents from the USA using these platforms.² However, the extent to which these sites are used specifically for selfie posting and viewing is not clear at present. Furthermore, some of these platforms may be geared toward selfie practices to a greater extent than others.

Although anecdotally it has been observed that children and adolescents frequently take selfies using smartphone devices,^{23,24} research is only beginning to investigate the extent to which young people engage with online selfie practices, versus taking pictures of themselves that are not designed to be used for online self-presentation. Research indicates that selfie taking, with or without the intention to share the selfie on social media, is very common among adolescents, with 97% of Italian adolescents having taken selfies.²⁵ However, frequency of selfie taking, as opposed to selfie posting and sharing, is less clear. In regard to offline selfies (those taken but not shared online), McLean et al,⁹ in their study of social media, body image, and disordered eating, found that on average, Australian early adolescent girls (mean age 13.13 years) took selfies once per week. Dhir et al²⁶ examined gender differences in selfie taking of Norwegian adolescents (mean age 16.96 years) and found a higher frequency of selfie taking in girls compared with boys. In contrast, Indian mid-adolescent boys and girls were found to take selfies at a similar frequency.²⁷ Although studies have also examined offline selfies in young adults (eg, Srivastava et al²⁸), to our knowledge, no studies have examined this practice in children.

In contrast to offline selfies, more is known about the frequency of selfie posting, or online selfies, although the use of different assessment tools for collecting frequency data hampers comparisons across samples. Singaporean early- and mid-adolescent girls were found to post selfies at a rate of approximately once per week.⁸ However, their selfie posting was evaluated only through the number of selfies posted on Instagram,⁸ which could reflect an underestimation of the total number of selfies posted, as adolescents are also known to post to multiple platforms including Facebook, Snapchat, and WhatsApp.^{27,29} Indeed, Boursier and Manna²⁵ reported that 82% of 14–19-year-old Italian adolescents shared selfies through Facebook and other social network sites and 60.2% shared selfies through WhatsApp groups. In investigations of Chinese adolescents' online selfies, Guo et al³⁰ and Zheng et al³¹ also examined posting to single platforms, the Chinese services WeChat friends' circle and Qzone, respectively. The studies reported noticeably discrepant levels of selfie posting, with greater frequency of posting to WeChat friends' circle (12–13 selfies posted per month) than to Qzone (with the total sample posting on average a little more than once per month, and a smaller proportion [42.15%] posting more than once per week). The difference in reported posting frequency may be accounted for by different data collection methods. Although self-report was used in both studies, data collected on postings to WeChat friends' circle³⁰ provide a somewhat objective measure of selfie posting, as adolescents were asked to check their phones to report how many selfies they had posted to this platform in the previous month. It is possible that when asked to recall their frequency of selfie posting, the method employed by many studies, including Zheng et al,³¹ adolescents may underreport their posting, because of either social desirability or inaccuracy of recall. Other studies have also examined frequency of selfie-taking behavior but either they did not report mean responses³² or responses were in a format (ie, never to always) which precluded conversion to number of selfies posted within a given time-frame.^{9,26} However, findings from these studies suggest that greater clarity is needed into gender disparities in online selfies, with Dhir et al²⁶ reporting that girls posted selfies more frequently than boys, which contrasted with the similar rates of posting between boys and girls reported by Guo et al.³⁰ Additional investigation of online selfies has indicated that adolescents are more active in their selfie posting than young or older adults,^{26,32} highlighting the need to examine the effects of selfie practices in this population.

Some studies have reported on both offline and online selfies. It has been found that these behaviors are highly positively correlated in early adolescent girls.⁹ The average frequency of taking selfies was higher than posting selfies for Norwegian boys and girls,²⁶ although the difference in frequency of taking and posting selfies was not tested with inferential statistics. Should this discrepancy be formally tested and confirmed in future studies, it may be that this ratio reflects low confidence in sharing selfies on social media, or concerns about appearance, such that adolescents may feel compelled to take many selfies before finding the “right” one to post. This process of taking and curating selfies as part of online self-presentation has been observed in young adult women.³³ The suggestion that adolescents may be concerned about sharing selfies online is also supported by the finding from Dutta et al,²⁷ that only 30.4% of adolescents felt confident while posting their selfies online. Alternatively, a higher proportion of offline to online selfies may be unrelated to well-being or body confidence, in that adolescents may prefer taking selfies for personal reasons and have no intention of sharing those photos online. For example, Balakrishnan and Griffiths³⁴ found that young adults have varying motives for selfie taking, some of which were more personally oriented, such as creating memories or enhancing mood. These motives may also apply for adolescents and account for the higher frequency of offline selfies. Further research is required to confirm the consistency of these observations and also to determine whether a difference in the ratio of offline to online selfies is innocuous, or indicative of body image or other concerns.

In addition to selfie taking and posting, engagement in practices to enhance self-presentation in selfies, such as editing and applying filters, has been investigated. A small number of studies have consistently indicated that adolescent girls and boys edit photos to improve appearance, but that they do this only rarely.^{8,9,26,35} In addition, when gender comparisons have been conducted, it has been shown that girls edit selfies more frequently than boys through the use of techniques such as filters and cropping²⁶ and making direct alterations to appearance.³⁵ Mascheroni et al³⁶ also found that it is not uncommon for adolescent boys and girls to report editing their social network profile picture, typically of their face, to present an ideal appearance. Furthermore, although quantitative studies indicate that adolescents edit their selfies infrequently, these qualitative findings suggest that adolescents recognize selfie editing performed by others,

but appear to be somewhat more reticent to disclose their own editing practices.³⁶

An intriguing qualitative study of Singaporean girls' selfie-editing practices shed some light on the motivations behind the use of selfie editing.³⁷ Girls reflected on selfie editing as a necessary practice to achieve ideal self-presentation to impress one's peers. Moreover, selfie editing was used as a means to manage insecurity and low self-esteem. Along with editing selfies, planning and staging of selfies, as well as careful selection of the best photo to post, was reported by these adolescent girls and all of these practices were viewed to be important for optimal self-presentation.³⁷ Similarly, girls from European countries also reported the use of editing and photo-selection practices prior to posting.³⁶ These observations of co-occurrence of staging, editing, and selecting selfies for posting are consistent with quantitative reports in which planning and photo selection, known as investment in selfies, have been found to be positively correlated with photo editing.^{9,35} Although the frequency of photo editing has not been found to be high, as touched on here and discussed in more detail below in the body confidence section, emerging findings suggest that such practices appear to be important for well-being and body confidence.

Impact of selfie practices on well-being and body confidence

Selfie viewing

Only a few studies have examined the impact of viewing selfies on well-being and body confidence in adolescents. Studies have generally found that viewing selfies is associated with poorer outcomes. Cross-sectional studies have shown that in adolescent girls from the USA, relative to overall Facebook use, greater exposure to appearance-related photo use of Facebook, which included engaging in selfie activities such as viewing friends' selfies and updating one's profile photo, as well as other non-selfie-related appearance activities including commenting on friends' photos, posting a photo, and untagging oneself in friends' photos, was related to a number of indicators of lower body confidence.³⁸ Similarly, a greater extent of browsing of Instagram selfies was found to be related to lower body confidence in Singaporean girls.⁸ Furthermore, the relationship between browsing Instagram selfies and lower body confidence was mediated by appearance comparison.⁸ Comments by adolescents from the UK in a qualitative study offer some insight into the effects of appearance comparison. Viewing selfies posted to social media by peers could result in the participants experiencing low body confidence or desires

to change appearance after comparing how they looked with the posted images.³⁹

Consistent with these correlational findings, experimental research has demonstrated negative effects on well-being and body confidence of viewing Instagram feeds. For example, following browsing of simulated Instagram feeds which featured gender-matched profiles of a teen model (female) or teen athlete (male), mid-adolescent American girls and boys experienced adverse effects on their positive and negative affect.⁴⁰ Specifically, participants who engaged in negative social comparisons while viewing the Instagram profiles had lower positive affect and higher negative affect after viewing the images.⁴⁰ Although the proportion of images that were selfies versus non-selfie profile images on these Instagram feeds was not specified in this research, it is likely that they contained a high number of selfies, as this is typically the case with Instagram profiles.⁴¹ Similarly, negative effects on body satisfaction, an important index of body confidence, were reported for mid-adolescent girls from the Netherlands who viewed Instagram selfies of a teenage girl when the selfies had been manipulated (by the researchers) to be closer to appearance ideals. Furthermore, body satisfaction was reduced to a greater degree for participants who had a higher, compared to lower, general tendency to compare themselves with others.⁴² It should be noted that this latter study collected only post-exposure measures of body satisfaction. The lack of control for pre-exposure levels suggests that the findings should be interpreted cautiously.

Taken together, these preliminary findings appear to mirror previous research demonstrating a negative impact on mood and body confidence in adolescents from exposure to traditional media^{43,44} and among adults following exposure to social media.^{45,46} Importantly, these initial findings of negative outcomes from selfie viewing in adolescents also point to the importance of social comparison as a moderator or predictor of negative effects, consistent with research examining outcomes for adult participants.⁴⁷ Thus, individuals with higher tendencies to compare their appearance to that of others seem to be at increased risk of experiencing negative effects of engaging in selfie practices.

Selfie posting and sharing

Research into the impact of selfie taking and posting is slightly more advanced than research on selfie viewing in terms of the volume of studies that have been conducted. Accordingly, a wider range of outcomes has been examined, although there has been greater focus on body image than on well-being.

Social acceptance

In relation to well-being, one area that has been explored is social acceptance. Social acceptance is highly important during the adolescent period⁴⁸ and qualitative studies have indicated the extent to which selfie posting, and responses and feedback, particularly in terms of the number of likes received, plays a role in social acceptance for adolescent girls.^{36,37} In support of this, Boursier and Manna²⁵ reported that the extent to which adolescent boys and girls expected selfie posting to improve their self-confidence, through increasing popularity and self-esteem, was positively related to the frequency of taking and posting selfies. Despite the importance of peer acceptance in adolescence, teens are critical of attempts to seek acceptance through selfie posting. In this way, early adolescent girls from the USA reported disparaging attitudes to posting selfies, perceiving that the only purpose for doing so was to attempt to seek praise or validation from others.²⁹ These findings demonstrate the challenging balance that adolescents must negotiate, between pressure to attain peer affirmation through “likes” and simultaneously not appearing to be striving for such affirmation. Although this has not been investigated, it is likely that this double bind may place adolescents under increased stress, particularly those for whom self-esteem is strongly linked to external validation.

Well-being

The study of the impact of selfies on well-being in adolescents is, to date, limited, and conclusions about the degree to which engagement with selfies has a positive or negative effect on well-being cannot be made. Although research with young adults has been conducted to examine relationships between selfie taking and posting on a range of outcomes, such as self-esteem,⁴⁹ mood,⁵⁰ and concern about social judgment by others,⁵¹ these outcomes have yet to be explored with adolescents. The emerging evidence in adults has suggested that these relationships may be somewhat complex depending on the timescale of assessments, and the characterization of outcomes as traits or states. For example, while selfie posting may be associated with positive self-esteem at the trait level, it seems that over the shorter term,⁴⁹ selfie posting may have more variable effects depending on the feedback received.⁵² In light of the centrality of social media for identity development in adolescence,⁵³ particularly as expressed through self-presentation in selfies,²⁵ further research on the impact of selfies on well-being in adolescents is needed.

Body confidence

In contrast to the limited focus on selfies and global well-being, further advances have been made in examining the relationship between and the impact of selfies on body confidence, more specifically in adolescents, although only a few studies have been conducted with boys. In studies with adolescent girls, findings have converged on certain points, although other contradictory results have emerged. For both Australian and Singaporean girls, univariate relationships between selfie practices and body image revealed that greater engagement in editing of selfies was associated with lower body confidence. Neither browsing nor posting in Singaporean girls, nor a combined variable reflecting taking and posting selfies in Australian girls, was significantly associated with body image variables.^{8,9} However, when Singaporean girls’ selfie practices were examined in a multivariate path model, selfie editing was no longer directly related to lower body confidence. In contrast, it was indirectly related via appearance comparisons, whereas a direct positive relationship from selfie posting to body confidence emerged, indicating that higher frequency of selfie posting was associated with greater body confidence.⁸ Findings from this study again suggest the importance of appearance comparisons. Selfie posting may activate appearance comparisons with internalized standards of appearance, such that adolescents may compare their selfies to idealized images seen in corporate media, or other digitally modified user-generated content. In addition, the editing and posting of digitally modified selfies may generate social comparisons with an ideal, but unrealistic, online self-presentation. However, in light of the lack of univariate relationship between selfie posting and body confidence, the positive relationship between posting and body confidence in the path model should be interpreted cautiously. As noted by the authors, it is possible that selfie posting was associated with body confidence under circumstances where careful selection of selfies took place, or where positive feedback to the posted selfies was received.⁸ These possibilities both have some support from the literature where, as noted previously in the selfie practices section, it has been demonstrated that adolescent girls engage in selective processes for selfie posting,^{9,35,36} and in adult women, positive associations between selfie posting and both body confidence and self-esteem were found to be mediated by the provision of positive feedback received for the selfies.⁴⁹

Self-objectification

In addition to examining body confidence outcomes, other studies have examined relationships between selfie practices and self-objectification, that is, the extent to which individuals internalize an external, observer's perspective of their body.⁵⁴ Higher levels of self-objectification reflect a stronger focus on appearance, relative to physical function. The consequences of this focus can be greater attention to or monitoring of appearance, known as body surveillance, and negative evaluation of one's body, known as body shame.⁵⁵ Body shame refers particularly to shame about not achieving an ideal appearance, and is indicative of low body confidence. Zheng et al³¹ examined the relationship between frequency of selfie posting to Qzone and self-objectification, namely the importance of appearance relative to body function. They found that Chinese adolescent girls aged 12–18 years with a higher frequency of selfie posting had higher levels of self-objectification. In addition, this relationship was moderated by imaginary audience ideation, which is the extent to which participants assume that others are looking at and thinking about them, such that the relationship between selfie posting and self-objectification was stronger in participants with high relative to low imaginary audience ideation. In a cross-sectional study with boys and girls in early adolescence, greater engagement with appearance-focused social media, including posting selfies alone, with other people, and displaying varying physical features (self only, body and face, body only), was indirectly associated with higher body shame.⁵⁶ The association was mediated by body surveillance, such that more appearance-focused social media posting statistically predicted body surveillance, which, in turn, predicted body shame.⁵⁶

Peer interactions and feedback

Extending from the discussion on social acceptance above, qualitative work among adolescent girls has suggested that peer interactions are a critical element of selfie posting, and to a large extent moderate the effects of selfie posting on well-being and body confidence. Adolescent girls described how peer recognition motivated selfie posting and engaging in selfie practices, and how the amount and valence of peer feedback play a predominant role in self-esteem and feelings of acceptance.³⁷ They also described the existence of “social norms” related to the reactions to selfie posting, for example, expectations for receiving a certain number of likes when they post content on social media.³⁷ However, when this is not achieved, it can result in poorer well-being outcomes among adolescents.⁵⁷ Insights from neural responses to feedback on

selfies through neuroimaging studies emphasize the role of peer interactions with selfies for social acceptance. Sherman et al⁵⁸ found that when adolescents viewed their own selfies that had been manipulated to be presented with a high number of likes, greater neural activity was recorded in areas of the brain implicated in social cognition, reward learning, and motivation relative to viewing selfies with a low number of likes. The authors speculated that receipt of positive feedback in the form of likes is socially rewarding and this behavioral reinforcement operates to motivate further engagement with selfie posting.⁵⁸

Positive feedback can indicate popularity and approval from peers (especially on aspects of appearance) and, therefore, this practice may be an important aspect of sharing selfies online. Cross-sectional research by Li et al⁵⁹ found that Singaporean adolescent girls place high importance on peer feedback, especially those with low self-esteem. Moreover, this importance is positively associated with depressed mood.⁵⁹ Similarly, Nesi and Prinstein⁶⁰ examined feedback seeking among US adolescents across one year and found it to be associated with higher levels of depressive symptoms. This effect was moderated by popularity and gender, whereby the effect was stronger among females and less popular adolescents. However, positive feedback from selfie posting may reinforce self-confidence and self-esteem among adolescents when expectations are met.²⁵ Although the literature examining these relationships in children and young adolescents is still scant, these findings parallel those of studies in adults reporting on the importance of feedback to online postings.^{52,61–63} Thus, consistent with work describing the poorer outcomes of contingent self-esteem, that is, self-esteem that is indexed to the positive feedback received from others, and its association with appearance comparisons,⁶⁴ it appears that placing importance on, or seeking, feedback from others on social media may have an overall negative impact on well-being over the longer term.

Additional work has examined the role of appearance comparisons in the effects of engaging in selfie practices among adolescents. Qualitative research has found that adolescent girls explicitly rejected appearance comparisons as a valid means of achieving self-esteem and body confidence, yet at the same time described how such comparisons were difficult to regulate and remained impactful.^{29,37} In addition, Nesi and Prinstein⁶⁰ examined online social comparisons and feedback seeking among adolescents across one year. Their results revealed that social comparisons and feedback seeking were associated with depressive symptoms. Therefore, despite recognizing the pitfalls of engaging in appearance comparisons with images of peers on social media,

adolescents reported engaging in such comparisons, which suggests that comparison may constitute a mechanism for the harmful effects of selfie practices on well-being and body confidence.

Thus, the emerging evidence related to the effects and correlates of engaging in selfie practices suggests that social processes, and peer recognition and feedback, may play an important role in both motivating engagement in selfie practices, as well as modulating the impact of these practices on well-being and body confidence. In addition, these findings highlight how overall these practices may be detrimental to sustaining positive self-image, particularly among those who place high importance on peer feedback and recognition.

Future directions

The literature reviewed above represents an emerging area of investigation and a number of important gaps still exist. The first and most critical gap is the near absence of research in children before they reach adolescence. Given the increase in the number of youth who own or have access to a mobile device and a social media account,^{2,3} extending research to children is critical. Including boys as well as girls in these efforts will also be crucial. A second area of future investigation includes increasing the understanding of the prevalence, function, and impact of engaging with selfies that are not intended for social media, ie, offline selfies. Understanding differences in the motivations and impacts of offline selfies relative to online selfies will be important for orienting future research and practices in settings such as schools or clinical services. Third, while some of the work reviewed above has started to identify vulnerability factors, it would be helpful to identify factors that might also play a role in buffering children from the harmful effects of engaging in selfie practices. Among adults and to a lesser extent adolescents, media literacy specific to social media, as well as dimensions of positive body image, have emerged as promising protective factors.^{45,65–69} Extending this work to include selfie-related initiatives, such as the promotion of “no-makeup selfies”,⁷⁰ positively focused selfies,⁷¹ and potentially humor in self presentations,⁷² will be necessary to ensure its relevance for adolescents and to combat the harmful aspects of selfie practices. Finally, the overwhelming majority of the existing research, across age groups, is currently cross-sectional, which precludes examination of the directionality of the underlying relationships. Developing experimental and longitudinal designs that can provide support for the directionality of the pathways proposed will be an important target. Overall, future research focused on identifying which types of practices, among which groups, are most

harmful for well-being and body confidence among children and adolescents will have the largest impact in terms of moving this field of inquiry forward.

Conclusion

Selfies are a novel, but increasingly widespread phenomenon which has only recently received attention from scholars. The initial evidence suggests that some aspects of selfie practices may be more tightly associated with well-being and body confidence outcomes, namely curating them, and seeking and placing importance on the feedback from peers. In addition, preliminary support has emerged for the moderating effect of some psychological processes such as appearance comparisons. Given the popularity of selfies, further characterizing the effects of engaging in selfie practices is an important area for future research. In addition, investigating how selfies can be used positively, as identity exploration, for fun, or to increase self-esteem, would be highly useful.

Disclosure

The authors report no conflicts of interest in this work.

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