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The Protective Role of Dispositional Mindfulness for Upward Social Comparison on Social Networking Sites: A Reduction in Tendency but Not Affliction

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The prevalence of positive self-presentation norms on social networking sites (SNSs) raises concerns about the potential harm to self-esteem from social comparison. Dispositional mindfulness (DM), by reducing automatic thinking and promoting adaptive responses to negative stimuli, could offer protection. To refine our understanding of DM in the context of SNS use, we examined its role in predicting social comparisons and buffering their negative effects on self-esteem. In an online survey of 307 adults (76% female), participants completed the Five Facet Mindfulness Questionnaire, an adapted version of the Iowa Netherlands Comparison Orientation Measure Scale, and the Rosenberg Self-Esteem Scale. Two models were assessed using the Hayes PROCESS macros (models 1 and 4) to test: (1) DM as a moderator between social comparison and self-esteem, and (2) the indirect effect of DM on self-esteem through social comparison. Higher DM predicted fewer upward social comparisons and more downward comparisons, which in turn correlated with more positive self-esteem. DM did not moderate the effect of SNS-induced social comparison on self-esteem. These findings suggest that mindfulness does not necessarily eliminate the tendency to socially compare but rather encourages a self-aware, self-kindness approach to present-moment experiences with more self-awareness to reduce the frequency of upward comparison.

Keywords: mindfulness, social comparison, self-esteem, social network sites, social media

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The use of social networking sites (SNSs) among young adults has reached an all-time high. Approximately 84% of adults ages 18 to 29 report using SNSs, with a vast majority visiting Instagram, Snapchat or TikTok daily (Auxier & Anderson, 2021). While SNSs offer potential social benefits, the established correlation between SNS use and decreased self-esteem raises concerns about users' mental health. Individuals who spend the most time on SNSs each day are 66% more likely to report depression than those who spend the least amount of time (Lin et al., 2016). SNS usage is marked as a strong contributor to the recent mental health crisis

(Abrams, 2023). SNSs present unparalleled opportunities for unfavourable social comparison that can lead to feelings of personal inadequacy; therefore, identifying approaches that may mitigate such comparisons or their effects is important to effectively help maintain young adults' self-esteem when using SNSs. Few studies suggest mindfulness as an effective approach to reducing social comparison within the context of social media. The objective of the current study is to empirically examine if dispositional mindfulness acts as a protective factor by either reducing unfavourable social comparisons or their effects.

THEORETICAL FRAMEWORK

Social comparison serves multiple functions, such as self-evaluation, self-improvement, and self-enhancement (Festinger, 1954). In situations lacking objective measures for self-assessment – in domains such as accomplishments, abilities, opinions, and attractiveness – individuals resort to comparisons to form their appraisal. The position of the comparison target and the consequence of the comparison are central to the social comparison process (Verduyn et al., 2020). Depending on perceiving the comparison target superior or inferior to oneself, individuals make upward and downward comparisons. Then, as a result of social comparison, the comparer's self-evaluation can shift toward (assimilation) or away from (contrastive) the comparison target. Assimilative comparison leads to more positive self-evaluations after upward comparison and more negative ones following downward comparison. Conversely, contrastive comparison generates more negative self-perceptions following upward comparison and more positive ones after downward comparison. In offline contexts, individuals predominantly compare themselves to upward comparison targets in a contrasting manner, resulting in less positive self-evaluation, feelings of envy, and worsened mood (Gerber et al., 2018; Gutierres et al., 1999). Even when comparing themselves with friends, individuals tend to underestimate their friends' negative experiences and overestimate positive experiences, leading to subsequent emotional distress (Jordan et al., 2011).

The nature of popular SNSs encourages upward social comparison (Chua & Chang, 2016; Lup et al., 2015). Users selectively share content on their profiles to a heterogeneous audience capable of responding through virtual likes and comments. Broadcasting to

diverse audiences and the feedback nature of SNSs heighten self-presentation concerns (Schlosser, 2020). Consequently, individuals tend to avoid sharing content that could create a negative impression (Barasch & Berger, 2014), which establishes a positivity bias on SNSs (Chua & Chang, 2016; Reinecke & Trepte, 2014). Browsing SNSs exposes individuals to idyllic content, creating an excessively positive impression that others are seemingly doing better on a mass scale. Given the tendency towards contrastive comparisons (Gerber et al., 2018; Gutierres et al., 1999), it follows that mindlessly comparing oneself to upward comparison targets when browsing SNSs typically triggers negative thoughts and envy, adversely affecting self-esteem (Liu et al., 2017; Ozimek & Bierhoff, 2020; Schmuck et al., 2019; Vogel et al., 2014).

Although social comparison can occur automatically and unconsciously (Mussweiler et al., 2006), it is crucial to explore strategies that mitigate upward social comparison, or negative thoughts emerging from the process, to protect self-esteem. Cultivating mindfulness during SNS use shows promise as mindfulness has been found to have a positive effect on self-esteem and well-being (Carpenter et al., 2019; Randal et al., 2015). Mindfulness is conceptualized as a state, meaning that techniques are being practiced in the present moment, which over time contributes to mindfulness as a trait (Kiken et al., 2015). As a stable personality trait, dispositional mindfulness (DM) is the natural ability to maintain awareness of the present moment, including both internal and external experiences, in a nonreactive and nonjudgmental manner (Carpenter et al., 2019; Shapiro et al., 2006). As fundamental components of mindfulness, re-perceiving entails a shift in perspective and how one observes experiences (Shapiro et al., 2006), while self-compassion relates to one's attitudes and response to these experiences (Neff, 2003). Re-perceiving fosters increased self-awareness, prompting individuals to step back from automatic or habitual reactions and observing thoughts, emotions, or situations with a non-judgmental perspective (Kiken & Shook, 2011; Maltais et al., 2019). This perspective encourages individuals to perceive thoughts as transient mental events rather than reflections of reality, fostering more intentional and adaptive responses to stimuli (Kiken & Shook, 2011; Shapiro et al., 2006). As a related concept, self-compassion in mindfulness emphasizes treating oneself with kindness and understanding (Neff, 2003). Cultivating

mindfulness leads individuals to refrain from harsh self-judgment and criticism, fostering a more accepting attitude toward themselves and their worth (Randal et al., 2015).

Despite its potential, empirical studies exploring the influence of mindfulness on the process of social comparison, both offline and especially within social media context, are limited. These few studies have observed a link between mindfulness and social comparison, indicating that higher levels of DM are associated with lower levels of social comparison tendencies offline (Dijkstra & Barelds, 2011; Langer et al., 2010) and in the social media context (Gu et al., 2022). Additionally, another study indicated that mindful adults, when given the opportunity to make social comparisons in the lab, evaluated their creative performance similarly to a group not exposed to social comparison targets (Langer et al., 2010). These findings suggest that mindfulness might somehow inhibit the social comparison process. While re-perceiving and self-compassion do not explicitly outline the intricacies of social comparison, the principles of mindfulness could indirectly shape how individuals engage in and/or respond to social comparison. First, mindfulness might reduce the occurrence of social comparisons, particularly upward contrastive ones, while browsing SNSs. Re-perceiving involves adopting a different perspective on thoughts and experiences. This shift can affect how individuals perceive social comparisons, enabling them to recognize unhelpful social comparisons and guide them back to the present moment more easily. Self-compassion can also mitigate the need for frequent social comparisons. When individuals are kinder to themselves and accept their imperfections, they may feel less compelled to compare themselves to others. They may recognize their own worthiness regardless of others' successes or failures.

Alternatively, mindfulness may alter the way individuals react to social comparisons. Hu et al. (2022) found that mindfulness moderated the indirect effect of upward social comparison on SNSs on adolescent materialism through self-esteem. Relevant to the current study, the negative relationship between upward comparison on SNSs and self-esteem was weaker for adolescents with higher (compared to lower) mindfulness. Similarly, in another study, adults who received training designed to enhance state mindfulness in the lab showed reduced susceptibility to the negative effects of social comparison when considering their own artistic performance (Langer et al., 2010). Thus, mindful re-perceiving may help individuals step back from automatic (judgmental)

reactions to social comparisons. Instead of immediately getting caught up in comparison or judgment, individuals can observe these thoughts and emotions more neutrally which can lessen the tendency to harshly evaluate oneself based on social comparisons. By observing their emotions without becoming overwhelmed by them, mindful individuals may experience a reduction in negative emotions triggered by upward social comparison. Similarly, being compassionate toward oneself allows for a less critical view of oneself in comparison to others. It helps individuals avoid harsh self-judgment based on these comparisons. While re-perceiving and self-compassion within mindfulness may not eliminate social comparisons on SNSs entirely, they may alter individuals' attitudes and responses to these comparisons.

Current Study

Studies have established the negative impact of SNS-induced upward social comparison on self-evaluations, alongside the positive correlation between DM and self-esteem. However, little attention has been devoted to the protective role of DM in the relation between social comparison and self-esteem, specifically in the context of SNSs. The current study aims to investigate two models. The first model will assess the indirect effect of DM on self-esteem through decreased social comparison (refer to Figure 1a). It is hypothesized that higher levels of DM will be associated with lower levels of social comparison, which in turn is related to more positive self-esteem. The second model, a risk-buffer model, will examine the moderating role of DM in the connection between social comparison and self-esteem (refer to Figure 1b). It is hypothesized that the negative relation between social comparison and self-esteem will be weaker among those with higher (compared to lower) levels of DM.

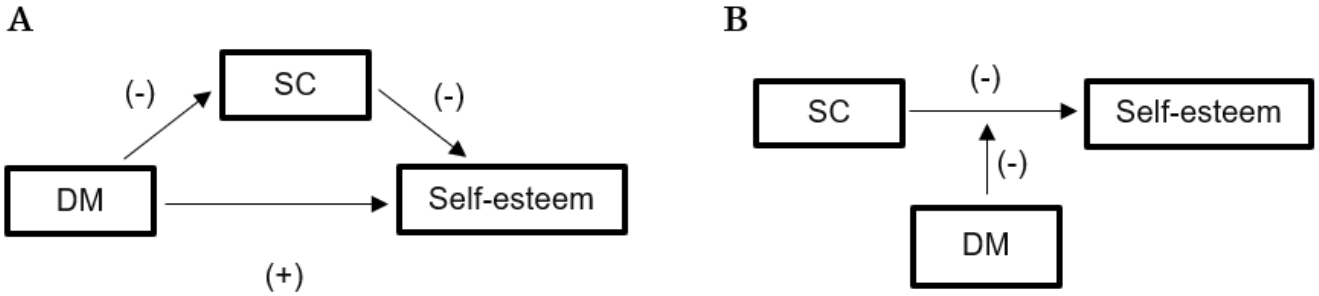

Figure 1. Hypothesized models. Panel A: Illustrates the hypothesized model of the indirect positive effect of dispositional mindfulness (DM) on self-esteem through decreased social comparison (SC). Panel B: Illustrates the hypothesized model of the moderating effect of dispositional mindfulness (DM) on the link between social comparison (SC) and self-esteem, where the negative relation between SC and self-esteem will be weaker among those with higher (compared to lower) levels of DM.

METHODS

Recruitment, Participants & Procedure

Adult participants were recruited using convenience sampling through a research participation pool at the authors' institution (n = 220) and via the first two authors' social media accounts (n = 87). Most participants were female (72.6%), Caucasian (66.9%, followed by 16.8% Asian/Indian descent), and young adults between ages 18 and 29 (83%; M_{age} = 24.01, SD = 6.93; range: 17-66 years). Individuals voluntarily participated in an anonymous online survey administered by the software PsyToolkit (Stoet, 2010; 2017) between December 15, 2021, and March 1, 2022. Data collection stopped when the target sample size of 300 was achieved. This study was approved by the human research ethics board at the authors' institution.

Measures

The following describes the measures used to collect descriptive data for the sample (SNS usage) and measures of the constructs central to the hypothesized models (DM, social comparison, and self-esteem). All measures were scored such that higher scores represented a greater degree of the construct. Cronbach's alpha, where applicable, are reported in Table 1.

SNS Usage. Subjective measures of SNS use were obtained by having participants select all SNSs they visit on a regular basis from the following options: Facebook, Instagram, Snapchat, TikTok, YouTube, Reddit, and Twitter. They self-reported the time spent on SNSs collectively per day, on average, in the past week (1 = *up to 30 min*, 10 = *more than 8 hours*), and how often they engaged in passively viewing others' posts without posting anything themselves (1 = *never*, 7 = *always*).

Dispositional Mindfulness (DM). The Five Facet Mindfulness Questionnaire (FFMQ) is a 39-item self-report measure of mindfulness components: observing, describing, acting with awareness, non-judging of experience, and non-reacting of experience (Baer et al., 2006). Items are rated on a five-point scale (1 = *never or very rarely true,* 5 = *very often or always true*) and averaged to obtain an overall mindfulness score.

Social Comparison on SNSs. Consistent with researchers who have revised the scale to specify the SNS context (Liu et al., 2017), we adapted the Iowa Netherlands Comparison Orientation Measure (INCOM) Scale (Gibbons & Buunk, 1999). Participants rated 11-items (e.g., I always pay a lot of attention to how I do things compared with how others do things) in terms of how they act, think, or feel when visiting SNSs (e.g., Facebook, Instagram, Snapchat, Twitter, Reddit). Ratings are provided on a five-point scale (1 = *I disagree strongly*, 5 = *I agree strongly*) and averaged to provide a measure of social comparison orientation.

Additionally, two items were included to directly assess the frequency of engaging in upward (i.e., "When you are visiting social networking sites, how often do you feel others are doing better than yourself?") and downward (i.e., "When you are visiting social networking sites, how often do you feel you are doing better than others?") social comparisons on SNSs. Participants rated each on a seven-point scale (1 = *never*, 7 = *always*).

Self-Esteem. The Rosenberg Self-Esteem Scale is a 10-item scale that measures global self-worth by measuring both positive and negative feelings about the self (Rosenberg, 1965). Items are answered using a four-point scale (1 = *strongly agree,* 4 = *strongly disagree*). After reverse scoring negatively worded items, ratings were averaged.

RESULTS

Preliminary Analyses

On average, adults in this sample reported spending about 3-4 hours on SNSs on an average day in the past week ($M = 5.00$, $SD = 2.06$), and frequently passively viewed others' posts ($M = 5.34$, $SD = 1.45$). Most participants indicated regularly visiting visually based SNSs including Instagram (83.4%), Facebook (56.0%), Snapchat (66.1%), TikTok (59.3%), and YouTube (63.2%). The descriptive statistics, correlation matrix and reliability indicators for the variables included in the models are presented in Table 1. The measure of social comparison orientation was positively correlated with the frequency of upward social comparisons and unrelated to downward comparisons. Social comparison orientation was also negatively related to DM and self-esteem. Therefore, the social comparison orientation measure is assumed to tap into upward contrastive comparisons that are linked with negative effects for self-esteem.

Table 1
Descriptive Statistics and Correlations between Variables in the Hypothesized Models

Variables	*M*	*SD*	Cronbach's α	1	2	3	4
1. SCO	3.46	.57	.78	--			
2. Upward SC	4.53	1.40	--	.52**	--		
3. Downward SC	3.36	1.13	--	-.04	-.08	--	
4. DM	3.02	.42	.86	-.39**	-.29**	.17**	--
5. Self-esteem	2.72	.52	.87	-.35**	-.44**	.20**	.56**

Notes. SCO = 11-item measure of social comparison orientation when visiting SNSs; Upward SC = single-item measure assessing the frequency of upward social comparison when visiting SNSs; Downward SC = single-item measure assessing the frequency of downward social comparison when visiting SNSs; DM = dispositional mindfulness.
*$p \leq .05$; **$p \leq .01$.

Testing Models

The moderation and mediation models were tested with version 3.2.03 of Hayes (2020) PROCESS macro in SPSS using models 1 and 4, respectively. Variables were

centered prior to entering the models, and bootstrapping analyses used 5,000 samples at the 95% confidence interval.

For the mediation model (refer to Figure 1a), DM was entered as the predictor, social comparison orientation as the mediator, and self-esteem as the outcome variable. An indirect effect of DM on self-esteem through social comparison would be supported by a non-zero index of mediation, in which the 95% confidence interval does not contain zero. The total effect of DM on self-esteem was significant (B = .69, SE = .06, t = 11.76, p < .001, 95% CI [.57, .81]). As presented in the top half of Table 2, social comparison orientation mediated the link between DM and self-esteem (B = .07, 95% CI [.02, .13]). Increases in DM were associated with decreases in social comparison orientation which in turn were related to increases in self-esteem. To further support that this effect was driven by upward social comparison, an additional mediation analysis was run with the single-item ratings for upward and downward social comparisons entered as parallel mediating variables. As presented in the bottom half of Table 2, both indirect effects were significant (upward: B = .11, 95% CI [.05, .16]; downward: B = .02, 95% CI [.001, .05]). Those with higher (compared to lower) levels of DM reported less upward comparison and more downward comparison, which in turn were associated with more positive self-esteem.

To assess moderation (refer to Figure 1b), DM was examined as moderator of the relationship between social comparison orientation and self-esteem. The overall model was statistically significant (R^2 = .33, F(3, 303) = 50.27, p <.001). Social comparison (B = -.14, 95% CI [-.23, -.05], t = -2.97, p = .003) and DM (B = .62, 95% CI [.49, .74], t = 9.81, p < .001) were significant predictors of self-esteem. However, DM did not moderate the effect of social comparison on self-esteem (B = -.02, 95% CI [-.20, .16], t = -.25, p = .80, ΔR^2 = .0001). In other words, social comparison orientation was negatively related to self-esteem for individuals with relatively low and high levels of mindfulness.

Table 2
Testing the Indirect Effects of Dispositional Mindfulness on Self-esteem Through Social Comparison

	B[a]	*SE B*	*t*	95% CI for *B*		R^2	*F*
Effects				LL	UL		
Model 1						.33	75.61***
DM → SCO	-.54	.07	-7.36***	-.68	-.40		
DM → S-E	.62	.06	9.81***	.49	.74		
SCO → S-E	-.14	.05	-3.02*	-.23	-.05		
DM → SCO → S-E[b]	.07	.03		.02	.13		
Model 2						.41	68.91***
DM → Up	-.96	.19	-5.20***	-1.33	-.60		
DM → Down	.45	.15	2.94**	.15	.75		
DM → S-E	.57	.06	9.77***	.45	.68		
Up → S-E	-.11	.02	-6.43***	-.14	-.08		
Down → S-E	.05	.02	2.32*	.01	.09		
DM → Up → S-E[b]	.11	.03		.05	.16		
DM → Down → S-E[b]	.02	.01		.001	.05		

Notes. DM = dispositional mindfulness; S-E = self-esteem; SCO = social comparison orientation; Up = single-item measure of upward social comparison when visiting SNSs; Down = single-item measure of downward social comparison when visiting SNSs.
[a]Effects values are represented by unstandardized regression coefficients based on variables that were mean centered.
[b]Indirect effects based on bootstrapping analyses that used 5,000 samples.
*$p \leq .05$; **$p \leq .01$; ***$p \leq .001$.

DISCUSSION

The present study is among the few examining how mindfulness acts as a protective factor for self-esteem amidst social comparison induced by SNSs. The findings reveal that DM was associated with a reduced tendency for upward comparison while browsing SNSs, relating to more positive self-esteem, rather than mitigating their negative impact. Additionally, DM was associated with an increased tendency toward downward social comparisons. The results suggest that mindfulness reduces the need for upward comparison as a basis for self-worth and equips individuals with a toolset to view others' situations in a healthier manner. Engaging in SNS browsing more mindfully may prompt individuals to consider the context behind others' situations. This may help in acknowledging the overly positive portrayal in posts without automatically getting caught up in the comparison. Moreover, mindful self-compassion involves acknowledging shared human

experience, leading to the recognition that everyone faces struggles and challenges and encouraging an inward focus on personal experiences (Neff, 2003). Mindfulness can nurture a more accepting, kind, and understanding relationship with oneself, leading to a more balanced and less critical self-view in comparison to others. It assists in recognizing personal successes, creating a sense of doing well even when browsing SNSs. Further supporting this idea, the link between DM and increased downward social comparison when browsing SNSs indicates that mindful individuals might feel better about their own circumstances and abilities overall.

When examining the impact of upward social comparison, DM was found ineffective in buffering the negative effects on self-esteem. These findings contrast with a prior study observing a risk-buffer effect within a sample of Chinese adolescents (Hu et al., 2022). Some evidence suggests that cultural differences related to self-concept may influence relationships of mindfulness and that the Western conceptualization of mindfulness by the FFMQ may be experienced differently from Eastern cultures (Carpenter et al., 2019). Western cultures, known for their individualistic self-concepts, may find it challenging to disregard feelings of malicious envy triggered by upward social comparison. Furthermore, it's been argued that a certain degree of mindfulness is necessary to create enough distance from one's negative experiences for feelings of self-compassion to emerge (Neff, 2003). In the current study, about three-quarters of the participants scored around 3 or less on the mindfulness (FFMQ) scale, indicating that adults might lack sufficiently strong mindfulness skills to consistently extend self-kindness during moments of harsh judgment. Future research endeavors could consider a more diverse group regarding DM to refine our understanding of mindfulness as a protective factor in managing negative thoughts and emotions arising during SNS use.

The current results have important practical implications. With social media becoming an integral part of daily life and children begin increasingly engaging with SNSs at younger ages (C.S. Mott Children's Hospital, 2021), it is crucial to equip individuals with knowledge and tools to circumvent SNSs' negative effects. Mindfulness training emerges as a powerful tool to enhance social media literacy by fostering awareness, critical thinking, and responsible usage. Mindfulness can enable

individuals to recognize how SNSs influence their thoughts, emotions, and behaviors. Through mindfulness, users can observe their reactions to content, assess its impact, understand triggers for specific (negative) emotions, and adjust their use accordingly. This approach encourages users to question information validity, evaluate biases, and engage in critical thinking before accepting content – competences that are key to social media literacy (Polanco-Levicán & Salvo-Garrido, 2022). Notably, some scholars have reported promising outcomes from mindfulness-based interventions in addressing problematic social media use (Weaver & Swank, 2019). Various techniques and programs, such as guided meditation, body scan exercises, mindful breathing, and mindful movement (Call et al., 2014; Grossman et al., 2004; Huberty et al., 2019) have been employed to teach mindfulness, progressively enhancing DM over time (Kiken et al., 2015). The effectiveness of apps (Huberty et al., 2019) and programs in schools (Zenner et al., 2014) delivering mindfulness training suggest viable approaches to develop cognitive competences necessary for healthier SNS use.

The current findings warrant consideration in light of certain limitations. First, given the correlational nature of this study, the causal relationship between DM and self-esteem through social comparison is theoretical. Mindfulness literature acknowledges a gap in our understanding of the causal link between DM and self-esteem. Potentially, individuals comfortable with themselves are more predisposed to being accepting and non-judgmental, suggesting that those with high self-esteem might approach experiences more mindfully. Moving forward, future research should delve deeper into understanding and differentiating the mechanisms underlying the link between DM, an individual's perceptions of social comparison, and self-esteem. Second, our results relied on self-reports for social comparison. While social comparison is typically viewed as an automatic and unconscious process, the scale used in our study addresses conscious awareness of comparisons made when using SNSs. It is plausible that mindfulness could still mitigate the effects of unconscious upward social comparison. To address these limitations, future research could adopt a longitudinal approach or experimentally induce mindfulness to assess its impact on the process of social comparison within the context of SNSs and ultimately self-esteem.

Conclusion

This study explored social comparisons among SNS users to understand how DM might act protectively for self-esteem. While mindfulness doesn't eradicate social comparison, it reshapes one's relationship with them, boosting self-esteem. More mindful individuals tend to engage less in assimilative upward social comparisons and more in downward ones. Being mindful while browsing SNSs may steer thoughts away from unfavorable comparisons and toward self-kindness, fostering a more positive self-view. Integrating mindfulness techniques into social media literacy programs offers a viable way to reduce mental health issues among SNS users.

References

Auxier, B., & Anderson, M. (2021). Social media use in 2021. *Pew Research Center*, *1*, 1-4. https://www.pewresearch.org/internet/2021/04/07/social-media-use-in-2021

Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment*, *13*(1), 27-45. https://doi.org/10.1177/1073191105283504

Barasch, A., & Berger, J. (2014). Broadcasting and narrowcasting: How audience size affects what people share. *Journal of Marketing Research*, *51*(3), 286-299. https://doi.org/10.1509/jmr.13.023

Call, D., Miron, L., & Orcutt, H. (2014). Effectiveness of brief mindfulness techniques in reducing symptoms of anxiety and stress. *Mindfulness*, *5*, 658-668. https://doi.org/10.1007/s12671-013-0218-6

Carpenter, J. K., Conroy, K., Gomez, A. F., Curren, L. C., & Hofmann, S. G. (2019). The relationship between trait mindfulness and affective symptoms: A meta-analysis of the Five Facet Mindfulness Questionnaire (FFMQ). *Clinical Psychology Review*, *74*, 101785. https://doi.org/10.1016/j.cpr.2019.101785

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

C.S. Mott Children's Hospital. (2021). Sharing too soon? Children and social media apps. https://mottpoll.org/sites/default/files/documents/101821_SocialMedia.pdf

Dijkstra, P., & Barelds, D. P. (2011). Examining a model of dispositional mindfulness, body comparison, and body satisfaction. *Body Image*, *8*(4), 419-422. https://doi.org/10.1016/j.bodyim.2011.05.007.

Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, *7*(2), 117-140. https://doi.org/10.1177/001872675400700202

Gerber, J. P., Wheeler, L., & Suls, J. (2018). A social comparison theory meta-analysis 60+ years on. *Psychological Bulletin, 144*(2), 177–197. https://doi.org/10.1037/bul0000127

Gibbons, F. X., & Buunk, B. P. (1999). Individual differences in social comparison:

Development of a scale of social comparison orientation. *Journal of Personality and Social Psychology*, *76*(1), 129-142. https://doi.org/10.1037//0022-3514.76.1.129

Grossman, P., Niemann, L., Schmidt, S., & Walach, H. (2004). Mindfulness-based stress reduction and health benefits: A meta-analysis. *Journal of Psychosomatic Research*, *57*(1), 35-43. https://doi.org/10.1016/S0022-3999(03)00573-7

Gu, C., Liu, S., & Chen, S. (2022). The effect of trait mindfulness on social media rumination: Upward social comparison as a moderated mediator. *Frontiers in Psychology*, *13*, 931572. https://doi.org/10.3389/fpsyg.2022.931572.

Gutierres, S. E., Kenrick, D. T., & Partch, J. J. (1999). Beauty, dominance, and the mating game: Contrast effects in self-assessment reflect gender differences in mate selection. *Personality and Social Psychology Bulletin*, *25*(9), 1126-1134. https://doi.org/10.1177/01461672992512006

Hayes, A. F. (2020). *Introduction to mediation, moderation, and conditional process analysis (3rd edition): A regression-based approach*. Guilford Press.

Hu, Y. T., Liu, Q. Q., & Ma, Z. F. (2022). Does upward social comparison on SNS inspire adolescent materialism? Focusing on the role of self-esteem and mindfulness. *The Journal of Psychology*, *157*(1), 32-47. https://doi.org/10.1080/00223980.2022.2134277

Huberty, J., Green, J., Glissmann, C., Larkey, L., Puzia, M., & Lee, C. (2019). Efficacy of the mindfulness meditation mobile app "calm" to reduce stress among college students: Randomized controlled trial. *JMIR mHealth and uHealth*, *7*(6), e14273. doi:10.2196/14273

Jordan, A. H., Monin, B., Dweck, C. S., Lovett, B. J., John, O. P., & Gross, J. J. (2011). Misery has more company than people think: Underestimating the prevalence of others' negative emotions. *Personality and Social Psychology Bulletin*, *37*(1), 120-135. https://doi.org/10.1177/0146167210390822

Kiken, L. G., Garland, E. L., Bluth, K., Palsson, O. S., & Gaylord, S. A. (2015). From a state to a trait: Trajectories of state mindfulness in meditation during intervention predict changes in trait mindfulness. *Personality and Individual Differences*, *81*, 41-46. https://doi.org/10.1016/j.paid.2014.12.044

Kiken, L. G., & Shook, N. J. (2011). Looking up: Mindfulness increases positive judgments and reduces negativity bias. *Social Psychological and Personality Science*, *2*(4), 425-431. https://doi.org/10.1177/1948550610396585

Langer, E., Pirson, M., & Delizonna, L. (2010). The mindlessness of social comparisons. *Psychology of Aesthetics, Creativity, and the Arts*, *4*(2), 68-74. https://doi.org/10.1037/a0017318

Lin, L. Y., Sidani, J. E., Shensa, A., Radovic, A., Miller, E., Colditz, J. B., Hoffman, B. L., Giles, L. M., & Primack, B. A. (2016). Association between social media use and depression among US young adults. *Depression and Anxiety*, *33*(4), 323-331. https://doi.org/10.1002/da.22466

Liu, Q. Q., Zhou, Z. K., Yang, X. J., Niu, G. F., Tian, Y., & Fan, C. Y. (2017). Upward social comparison on social network sites and depressive symptoms: A moderated mediation model of self-esteem and optimism. *Personality and Individual Differences*, *113*, 223-228. https://doi.org/10.1016/j.paid.2017.03.037

Lup, K., Trub, L., & Rosenthal, L. (2015). Instagram# instasad?: Exploring associations among Instagram use, depressive symptoms, negative social comparison, and strangers followed. *Cyberpsychology, Behavior, and Social Networking*, *18*(5), 247-

252. https://doi.org/10.1089/cyber.2014.0560

Maltais, M., Bouchard, G., & Saint-Aubin, J. (2019). Mechanisms of mindfulness: The mediating roles of adaptive and maladaptive cognitive factors. *Current Psychology*, *38*, 846-854. https://doi.org/10.1007/s12144-017-9665-x

Mussweiler, T., Rüter, K., & Epstude, K. (2006). The why, who, and how of social comparison: A social-cognition perspective. In S. Guimond (Ed.), *Social comparison and social psychology: Understanding cognition, intergroup relations, and culture* (pp. 33-54). Cambridge University Press.

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

Ozimek, P., & Bierhoff, H. W. (2020). All my online-friends are better than me–three studies about ability-based comparative social media use, self-esteem, and depressive tendencies. *Behaviour & Information Technology*, *39*(10), 1110-1123. https://doi.org/10.1080/0144929X.2019.1642385

Polanco-Levicán, K., & Salvo-Garrido, S. (2022). Understanding social media literacy: A systematic review of the concept and its competences. *International Journal of Environmental Research and Public Health*, *19*(14), 8807. https://doi.org/10.3390/ijerph19148807

Randal, C., Pratt, D., & Bucci, S. (2015). Mindfulness and self-esteem: A systematic review. *Mindfulness*, *6*, 1366-1378. https://doi.org/10.1007/s12671-015-0407-6

Reinecke, L., & Trepte, S. (2014). Authenticity and well-being on social network sites: A two-wave longitudinal study on the effects of online authenticity and the positivity bias in SNS communication. *Computers in Human Behavior*, *30*, 95-102. https://doi.org/10.1016/j.chb.2013.07.030

Rosenberg, M. (1965). Rosenberg self-esteem scale (RSE). *Acceptance and commitment therapy: Measures package*, *61*(52), 18. https://integrativehealthpartners.org/downloads/ACTmeasures.pdf#page=61

Schlosser, A. E. (2020). Self-disclosure versus self-presentation on social media. *Current Opinion in Psychology*, *31*, 1-6. https://doi.org/10.1016/j.copsyc.2019.06.025

Schmuck, D., Karsay, K., Matthes, J., & Stevic, A. (2019). "Looking Up and Feeling Down". The influence of mobile social networking site use on upward social comparison, self-esteem, and well-being of adult smartphone users. *Telematics and Informatics*, *42*, 101240. https://doi.org/10.1016/j.tele.2019.101240

Shapiro, S. L., Carlson, L. E., Astin, J. A., & Freedman, B. (2006). Mechanisms of mindfulness. *Journal of Clinical Psychology*, *62*(3), 373-386. https://doi.org/10.1002/jclp.20237

Stoet, G. (2010). PsyToolkit: A software package for programming psychological experiments using Linux. *Behavior Research Methods*, *42*, 1096-1104. https://doi.org/10.3758/BRM.42.4.1096

Stoet, G. (2017). PsyToolkit: A novel web-based method for running online questionnaires and reaction-time experiments. *Teaching of Psychology*, *44*(1), 24-31. https://doi.org/10.1177/00986283166776

Weaver, J. L., & Swank, J. M. (2019). Mindful connections: A mindfulness-based intervention for adolescent social media users. *Journal of Child and Adolescent Counseling*, *5*(2), 103-112. https://doi.org/10.1080/23727810.2019.1586419

Verduyn, P., Gugushvili, N., Massar, K., Täht, K., & Kross, E. (2020). Social comparison on social networking sites. *Current Opinion in Psychology*, *36*, 32-37. https://doi.org/10.1016/j.copsyc.2020.04.002

Vogel, E. A., Rose, J. P., Roberts, L. R., & Eckles, K. (2014). Social comparison, social media, and self-esteem. *Psychology of Popular Media Culture*, *3*(4), 206-222. https://doi.org/10.1037/ppm0000047

Zenner, C., Herrnleben-Kurz, S., & Walach, H. (2014). Mindfulness-based interventions in schools—a systematic review and meta-analysis. *Frontiers in Psychology*, *5*, 603. https://doi.og/10.3389/fpsyg.2014.00603

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