



Self-Compassion and Instagram Use Is Explained by the Relation to Anxiety, Depression, and Stress

Rebecca Keyte¹ · Lauren Mullis¹ · Helen Egan¹ · Misba Hussain¹ · Amy Cook¹ · Michail Mantzios¹

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Abstract

Previous research acknowledges that prolonged social media use is associated with several negative psychological consequences, including higher levels of depression, anxiety, and stress. In order to protect individuals from social stressors, research illustrates the role that self-compassion can play, with individuals high in self-compassion reporting greater emotional wellbeing; hence, proposing self-compassion could be a trait that is positively related to social media use. This research aimed to investigate the relationship between Instagram use and self-compassion, and whether this relationship can be explained through the relation to psychological wellbeing (depression, anxiety, and stress). A cross-sectional study was conducted to investigate this relationship amongst young adults ($n = 173$), utilizing a revised version of The Multidimensional Facebook Intensity Scale to explore Instagram, The Self-Compassion Scale, and the Depression, Anxiety, and Stress Scale. Instagram intensity appeared to influence psychological wellbeing, with participants who spent more time on Instagram reporting poorer psychological wellbeing. Whilst higher levels of self-compassion were associated with lower levels of reported depression, anxiety, and stress, the relationship between Instagram intensity and self-compassion was not mediated to the extent as expected by wellbeing. Possible explanations and future directions are discussed as to what could explain the positive relationship between self-compassion and Instagram use.

Keywords Instagram · Self-compassion · Wellbeing · Stress · Mental health

Introduction

Social media has become an essential part of young peoples' daily lives (Alt 2018), with at least 92% of adolescents being active on social media (Pew Research Centre 2018). New pressures and challenges in comparison to previous generations suggest a need for further and relevant support, training, and coping skills in a technologically advanced society (Mathur and Freeman 2002). Consequently, understanding the impact elements that might enable social media use to be positive upon wellbeing is a priority within contemporary research (Keles McCrae and Grealish 2019).

An important developmental process which occurs during adolescence and young adulthood is the creation and maintenance of friendships (Hartup 1996; Manago et al. 2012; Strasburger et al. 2009), with one's peer group often being

more valued by a young adult as a source of social support than their parental relationships (Boyd and Bee 2012; Coleman 1974). Today's generation of adolescents and young adults is the first cohort to have grown up with online social networking sites, which will have played an influential role in the development and maintenance of their friendships. Studies have demonstrated beneficial effects of social media use, with such platforms enabling individuals to receive social support, whilst expressing their thoughts and feelings (Deters and Mehl 2013; Lenhart et al. 2015; Lilley et al. 2014; O'Keeffe and Clarke-Pearson 2011; Rosen 2011).

Nonetheless, in recent decades there has been a growing concern regarding the link between social media use and mental health issues (Luchman et al. 2014), particularly due to the simultaneous increase in popularity of social media, alongside an increase in mental health problems (Kim 2017). Literature illustrates that social media use can become addictive, disrupting time management (Alt 2018), with prolonged social media use being linked to several negative psychological consequences, including higher

✉ Rebecca Keyte
Rebecca.Keyte@bcu.ac.uk

¹ Department of Psychology, School of Social Sciences, Birmingham City University, Birmingham, UK

levels of depression, anxiety and stress (Alavi et al. 2011; Best et al. 2014; Hoare et al. 2016; Marino et al. 2018; McCrae et al. 2017; Van den Berg et al. 2007). Research has indicated that the more time an individual spends passively engaging with social media (e.g. scrolling through social media feeds), the more likely they are to encounter interest loss, concentration problems, fatigue, and loneliness, with passive social media use being associated with several depressive symptoms, such as a depressed mood and feelings of being inferior (Aalbers et al. 2018).

The vast majority of existing research investigating the impact social media use has upon mental health and well-being predominantly focuses upon Facebook (Hayes et al. 2015), with Instagram remaining largely under-researched, despite it currently having more than one billion users (Rosney 2019). Instagram has become increasingly popular amongst adolescents and young adults, with research highlighting that 72% of adolescents use Instagram in comparison to Facebook (Anderson and Jiang 2018). Sherlock and Wagstaff (2018) suggest that excessive Instagram use may contribute to negative psychological outcomes, with The Royal Society for Public Health (2017) concluding that Instagram is the most damaging social network for mental health.

While previous research illustrated the detrimental impact of social media upon mental health, protective elements that could assist users in promoting their wellbeing is scarce. Self-compassion is one element that could enable a healthy relationship to social media. Self-compassion is defined as engaging in self-kindness rather than self-criticism, and learning to accept that having imperfections is part of human nature (Neff 2003). Research illustrates that individuals high in self-compassion report greater emotional wellbeing, with it being suggested that self-compassion may protect individuals from social stressors (Bluth et al. 2016). Furthermore, individuals who use social media platforms may develop harsh judgements towards themselves when they encounter attractive, successful, or socially desirable images (Vogel et al. 2014). As a result, self-compassion could play an influential role in encouraging users of social media platforms to be non-judgmental towards themselves (Kelly et al. 2014), and adopt a more compassionate perspective on oneself.

The present study aimed to progress previous research by investigating the impact Instagram use has upon psychological wellbeing (depression, anxiety and stress), as well as explore the relationship between self-compassion and Instagram. It was hypothesized that Instagram intensity would positively correlate with higher levels of depression, anxiety, and stress, with self-compassion displaying a relationship to Instagram that is explained through psychological wellbeing.

Methods

Participants

One hundred and seventy-three participants (females: 115; males: 57; transgender: 1) were recruited via volunteer sampling. Participants responded to an advertisement placed on the online social media platforms Facebook and Instagram to participate in a study investigating the impact Instagram use has upon wellbeing within the adult population. Individuals were excluded if they were under 18 years of age. Participants reported an average age of 24.53 ($SD = 7.84$). Frequencies and percentages for sex, ethnicity, and sexuality are presented in Table 1. Participants did not receive any benefits or rewards for taking part in this research.

Materials

Participant Information Sheet

Participants were requested to report their age, sex, sexual orientation, and ethnicity.

The Multidimensional Facebook Intensity Scale (Orosz et al. 2016)

The Multidimensional Facebook Intensity Scale was adapted, with items been revised to ensure they measured Instagram intensity as opposed to Facebook intensity. The Multidimensional Facebook Intensity Scale consists of 13 items, and utilizes a 5-point Likert scale, with responses ranging from 1 (never) to 5 (always). The scale is divided into four dimensions, acknowledging that individuals can use Instagram due to *persistence* (e.g. “If I could visit only one site on the Internet, it would be Instagram”), to relieve

Table 1 Frequency table for demographic information

Variable	<i>n</i>
Sex	
Female	115
Male	57
Transgender	1
Ethnicity	
White–English Welsh Scottish Northern Irish British	145
Asian	13
Black or African American	6
Any other ethnic group	9
Sexual orientation	
Heterosexual	165
Gay, lesbian, or bisexual	8

boredom (e.g. “When I’m bored, I often go to Instagram”), as a form of *self-expression* (e.g. “I like refining my Instagram profile”), and with some individuals engaging in *overuse* (e.g. “I spend more time on Instagram than I would like to”). The present study produced an alpha of $a = 0.88$ for the revised Facebook Intensity Scale, with the reported alpha scores for each dimension being as follows: *persistence* ($a = 0.79$), *boredom* ($a = 0.85$), *self-expression* ($a = 0.74$), and *overuse* ($a = 0.76$). The adopted scale is available through by contacting the first author.

The Depression Anxiety and Stress Scale (Lovibond and Lovibond 1995)

The Depression Anxiety and Stress Scale-21 (DASS-21) contains three self-report scales designed to measure an individual’s emotional states of depression, anxiety, and stress. The DASS-21 consists of 21 items, and utilizes a 4-point Likert scale ranging from 0 (did not apply to me at all) to 3 (applied to me very much or most of the time). The DASS-21 instructs individuals to report how frequently they have experienced certain symptoms over the previous week. Sample items include “I could not seem to experience any positive feeling at all” (depression scale), “I was worried about situations in which I might panic and make a fool of myself” (anxiety scale), and “I tended to over-react to situations” (stress scale). The reported alpha scores for each scale are as follows for the present study: *depression* ($a = 0.90$), *anxiety* ($a = 0.83$), and *stress* ($a = 0.84$).

Self-Compassion Scale (Neff 2003)

The Self-Compassion Scale (SCS) assesses an individual’s likelihood of being selfcompassionate during times of distress and disappointment (Neff 2003). The SCS consists of 26 items, and utilizes a 5-point Likert-type scale, with responses ranging from 1 (almost never) to 5 (almost always). Sample items include “I’m disapproving and judgmental about my own flaws and inadequacies” (i.e. self-judgement) and “I try to be loving towards myself when I’m feeling emotional pain” (i.e. self-kindness). The present study produced an alpha of $a = 0.93$ for the SCS, with the SCS being divided into six subscales. Each subscale contains the following number of items, with the reported alpha scores for each subscale being as follows: *self-kindness* (5 items; $a = 0.83$), *self-judgement* (5 items; $a = 0.75$), *common humanity* (4 items; $a = 0.77$), *isolation* ($a = 0.75$), *mindfulness* (4 items; $a = 0.67$), and *over-identification* (4 items; $a = 0.67$).

Procedure and Design

Potential participants were provided with a link to click on, which directed them to a participant information sheet containing all study information, along with the researchers contact details. Those who wished to participate were then directed to a consent form. Upon providing written informed consent, participants were presented with the demographic form and the questionnaires. Once the study was complete, participants were presented with a debriefing sheet, informing them of the study, and again providing participants with the contact details of the researchers if they wanted to withdraw, or wished to find out the results of the study at a later date. Ethical approval was granted by the Universities Research Ethics Committee, with the study conforming to the ethical guidelines set by the British Psychological Society.

Analyses

Data analysis was conducted using SPSS software (version 24.0; IBM Corp. 2016). The relationships between all study variables were examined using correlational analysis. Next, four mediation analyses were used to evaluate the hypothesized indirect effects of self-compassion on Instagram intensity (with an overall wellbeing score through combining the scores of depression, anxiety, or stress, as well as separate analyses for each sub-scale). The PROCESS macro (version 3.3; Preacher and Hayes 2008a;) for SPSS was used to conduct the mediation analyses (Model 4) using 10,000 bootstrapping resamples to generate 95% bias-corrected confidence intervals for the indirect effect (Preacher and Hayes 2008a, b). PROCESS trials the effect of the independent variable (*path a*) on each of the potential mediators, the effect of the mediator on the dependent variable (*path b*), the total effect of the independent variable on the dependent variable (*path c*), and the direct effect of the independent variable on the dependent variable with the mediator accounted for within the model (*path c'*), similar to other methods described in previous literature (Baron and Kenny 1986). Bootstrapping is an additional element to past methodologies, whereby this nonparametric method is used to estimate the *indirect effects* (*ab*) of the independent variable on the dependent variable through the proposed mediators. The indirect effect is significant when zero is not included within the intersection between 95% confidence intervals (Preacher and Hayes 2008a).

Results

Inter-correlations for all study variables are presented in Table 2. All variables were significantly correlated in the predicted direction. Results demonstrated a strong

Table 2 Descriptive statistics and zero-order correlations for all primary variables and covariates

Measure	1	2	3	4	5	6	7
1. Self-Compassion	1						
2. Instagram	-0.22**	1					
3. Depression	-0.40**	0.39**	1				
4. Anxiety	-0.22**	0.27**	0.71**	1			
5. Stress	-0.45**	0.45**	0.78**	0.75**	1		
6. DASS	-0.40**	0.42**	0.91**	0.88**	0.93**	1	

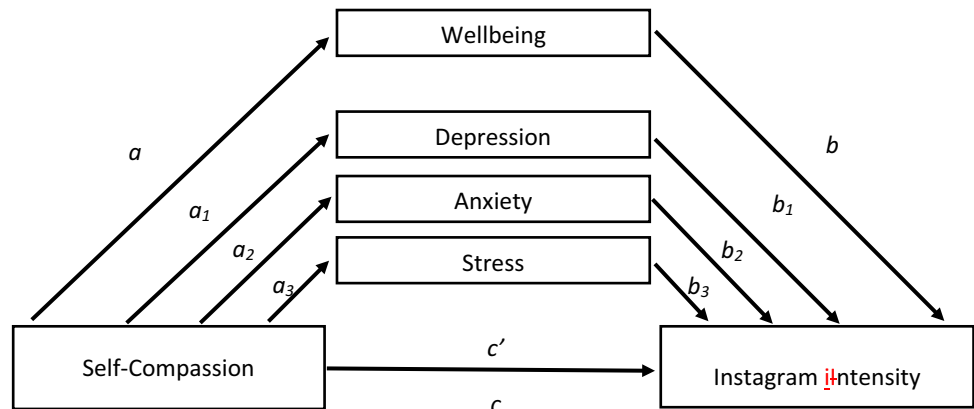
** 0.01

positive correlation between Instagram intensity and wellbeing (depression, anxiety, and stress); with self-compassion relating negatively with both Instagram intensity and wellbeing.

All meditational models predicted Instagram intensity (see Fig. 1). The first model analyzed self-compassion as the independent variable, Instagram intensity as the

The next three meditational models also predicted Instagram intensity, but looked at the sub-scales of wellbeing; namely, depression, anxiety, and stress. Self-compassion had a significant direct effect on Instagram intensity, and a significant indirect effect via depression, anxiety, and stress. These results were consistent with our hypotheses. The total effect increased and changed to non-significant

Fig. 1 Parallel mediations using standardized regression coefficients to examine the relevance of wellbeing (and separately of depression, anxiety, and stress) for the relationship between self-compassion and Instagram intensity



dependent variable, and wellbeing as a potential mediator. Self-compassion had a significant direct effect on Instagram intensity and a significant indirect effect via wellbeing (see Table 3). When wellbeing was included in the mediation model, the total effect of self-compassion on Instagram intensity was decreased and changed to non-significant ($p < 0.001$).

when depression, anxiety, and stress were included in the models (see Table 4). The 95% confidence intervals for the indirect effects included zero in the depression and anxiety models, but not in the stress model, highlighting the statistical significance of the mediating effect of stress on the relationship between self-compassion and Instagram intensity.

Table 3 Mediation of the effect of self-Compassion on Instagram intensity through wellbeing

	Instagram intensity				
	Std. β	t	p	95% CI	
Self-com- passion	Total (c)	-0.01	-2.73	0.01	(-0.02, 0.00)
	Direct (c^1)	0.00	-0.84	0.40	(-0.01, 0.00)
	Indirect (ab)	-0.01			(-0.01, 0.00)

Total (c) = Direct (c^1) + Indirect wellbeing (ab)

Table 4 Mediation of the effect of self-compassion on Instagram intensity through depression, anxiety and stress

	Instagram intensity				
	Std. β	t	p	95% CI	
Self-com- pas- sion	Total (c)	-0.01	-2.73	0.01	(-0.02, 0.00)
	Direct (c^1)	0.00	0.17	0.87	(-0.01, 0.00)
	Depression (a_1b_1)	0.00			(-0.01, 0.00)
	Anxiety (a_2b_2)	0.00			(0.00, 0.01)
	Stress (a_3b_3)	0-0.01			(-0.02, 0.00)

Discussion

This study aimed to explore the relationship between Instagram intensity and psychological wellbeing (depression, anxiety, and stress), as well as Instagram intensity and self-compassion. As expected, Instagram intensity appeared to influence psychological wellbeing, with participants who spent more time on Instagram reporting poorer psychological wellbeing; this was significant for depression, anxiety, and stress. These findings are in line with previous research (Aalbers et al. 2018; Alavi et al. 2011; Best et al. 2014; Hoare et al. 2016; Marino et al. 2018; McCrae et al. 2017; Van den Berg et al. 2007) in suggesting that prolonged social media use is linked to several negative psychological consequences, with the present study specifically focusing upon Instagram intensity as oppose to viewing social media holistically.

In line with previous research, higher levels of self-compassion were associated with lower levels of reported depression, anxiety, and stress (Bluth et al. 2016), suggesting that self-compassion may protect individuals from social stressors, with results illustrating that those participants who demonstrated higher levels of self-compassion spent less time on Instagram. When findings were explored further through mediation, the relationship between self-compassion, Instagram intensity, and wellbeing failed to fully explain how self-compassion enables a positive relationship, whereby people who score higher in self-compassion use Instagram less. This suggests that interventions to promote psychological wellbeing amongst young adults who use Instagram needs to go beyond explorations of wellbeing, and potentially focus on other elements that may create a buffer to the negative impact of social media and Instagram. Interventions and explorations could focus upon encouraging non-judgement amongst young adults who use Instagram, and explore elements such as social comparison and self-esteem as potential explanations of better mental health and lower use of social media.

Whilst these findings do provide suggestions for future interventions, limitations do need to be acknowledged. This research purposely focused upon Instagram intensity to investigate whether prolonged Instagram use impacts psychological wellbeing in the same way that prolonged social media use does in general. However, further research is required to investigate how individuals are interacting with Instagram and the impact such interactions specifically have upon psychological wellbeing (e.g. do they follow celebrities, peers, users promoting exercise), with it being likely that Instagram use impacts wellbeing in a number of different ways, such as influencing body esteem amongst users. Research does illustrate that individuals who use Facebook report higher levels of body dissatisfaction (Tiggemann et al. 2013), consequently leading to work that could be done to investigate the impact Instagram use has upon body esteem. Johnson and Knoblock-Westerwick (2016) argued that image-based social media posts have demonstrably different effects on users' affect than text-based social media posts. Furthermore,

within the present study males were underrepresented, with ethnicity and sexual orientation also containing unequal representation, as does age; it has to be noted that a large number of individuals use Instagram outside of the age range included within the present study. Lastly, the participants in the present study are self-selected subjects, so potentially are not representative of the broader population. Future research now needs to investigate males, different ethnicities, and sexual orientations, as well as a larger age range in an attempt of exploring interventions to promote wellbeing amongst different Instagram users.

Overall, the study provides insight into the influence of self-compassion upon the relationship between Instagram intensity and wellbeing. For now, it can be assumed that whilst self-compassion interventions could be useful in promoting psychological wellbeing, interventions need to explore potential constructs that could offer an explanation as to how there is a positive outcome for Instagram users.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Ethical Approval All procedures performed within this research which involved human participants was in accordance with the ethical standards of the institutional and/or national research committee (Ethics Reference: PSY_BSc_Dec18_128) and with the 1964 Helsinki declaration and its later amendments.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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