COVID-19-Related Stress and Body Image Disturbance: Is Self-Compassion a Mediating

Factor? Evidence from the United Kingdom Under Lockdown

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Abstract

The ongoing coronavirus (COVID-19) pandemic and attendant lockdown mandates may have detrimental effects on body image outcomes, which in turn highlights the importance of identifying protective factors. Here, we examined associations between COVID-19-related stress and body image disturbance, as well as the potential mediating role of self-compassion. During the third lockdown in the United Kingdom, we asked an online sample of adults ($N =$ 600) to complete measures of COVID-19-related stress, body image disturbance, and self-compassion. Mediation analysis showed that higher COVID-19-related stress was significantly associated with greater body image disturbance, and that this relationship was mediated by self-compassion. Greater COVID-19-related stress was associated with lower self-compassion and, in turn, greater self-compassion was associated with lower body image disturbance. These results suggest that promoting greater self-compassion may be a viable means of mitigating adverse outcomes from the COVID-19 pandemic on body image disturbance.

Keywords: Body image disturbance; Stress; Self-compassion; COVID-19; Lockdown

1. Introduction

To limit transmission of the novel coronavirus (COVID-19), the United Kingdom mandated several periods of lockdown in 2020 and 2021, the most recent of which severely limited opportunities to leave the home (including to work), maintain social contact, and access educational and other services (Cabinet Office, 2021). Such measures can slow the spread of COVID-19 (e.g., Lau, Khosrawipour et al., 2020), but they – and the resulting changes in behavioural patterns and emotional functioning – also have a serious impact on psychological well-being (Browning et al., 2021). Data from the United Kingdom Household Longitudinal Study panel, for instance, indicates that the first nationwide lockdown led to a substantive increase in the prevalence of clinically-significant mental health distress (Pierce et al., 2020). Such findings mirror increases in rates of severe stress, anxiety, and depression across many nations during the pandemic (for a review, see Xiong et al., 2020).

The COVID-19 pandemic may also have a serious impact on body image concerns, which in turn contribute to eating disorder symptomatology (Touyz et al., 2020; Weissman et al., 2020). Scholars have highlighted the likelihood that changes to daily routines – particularly changing eating habits, limited opportunities to exercise (Ammar et al., 2020), and limited access to beauty services (Pikoos et al., 2020) – may increase appearance-related anxiety and body image concerns (Cooper et al., 2020; Rodgers et al., 2020). This is compounded by heightened screen-time under lockdown, which increases the likelihood of exposure to idealised appearance standards, fear-mongering over weight-gain, and narratives of self-improvement (Rodgers et al., 2020). The stress and anxiety triggered by the COVID-19 pandemic may also impede body image coping mechanisms and amplify maladaptive coping, leading to greater frequency of negative body ruminations (Cooper et al., 2020).

Only a small handful of studies have empirically tested these suggestions. One study of adults in the United Kingdom ($N = 264$) found that almost half of respondents reported

being more concerned about their appearance during the first lockdown compared to pre-lockdown, with women being particularly at risk (Robertson et al., 2020). Another study of Spanish girls and women ($N = 2,601$) found that use of social networking sites had increased under lockdown, which in turn was associated with higher body dissatisfaction and drive for thinness (Vall-Roqué et al., 2020). A final study of adults in the United Kingdom ($N = 506$) found that COVID-19-related stress and anxiety were associated with more negative body image (body dissatisfaction and drive for thinness in women, body fat and muscularity dissatisfaction in men) over-and-above perceived stress and trait anxiety (Swami et al., 2021).

Although emergent, these findings highlight the importance of identifying protective factors that may mitigate the effects of the COVID-19 pandemic and lockdown on body image outcomes. One variable that may be useful in this regard is self-compassion, which involves a caring and accepting relationship with the self (Gilbert, 2014). More specifically, Neff (2003a) defined self-compassion as involving self-kindness rather than critical self-judgement, seeing one's experiences as part of wider common humanity rather than as separating and isolating, and holding painful thoughts and feelings in balanced awareness (i.e., mindfulness) rather than over-identifying with them. In this view, self-compassion is a dynamic state of balance between compassionate and uncompassionate responses to circumstantial threats (i.e., low uncompassionate responses are as important as high compassionate responses; Neff, 2003b).

Given its emphasis as a key resource for adaptive emotion regulation, self-compassion may be an important factor that protects against adverse experiences during the COVID-19 pandemic. Indeed, emerging evidence has shown that, under conditions of lockdown, self-compassion is significantly associated with higher life satisfaction (Li et al., 2021) and greater perceived benefits (e.g., time to learn new skills) experienced during the pandemic (Lau, Chan et al., 2020). Moreover, one study showed that a smartphone-based

intervention aimed at improving self-compassion was successful at reducing stress and emotional eating during the pandemic (Schnepper et al., 2020). Conversely, however, greater fear of COVID-19 (Mohammadpour et al., 2020) and greater perceived threat from COVID-19 (Kavaklı et al., 2020) have been associated with lower self-compassion. Nevertheless, these findings suggest that self-compassion may be a particularly useful factor to consider in relation to the maintenance of well-being during the COVID-19 pandemic.

Importantly, the pre-pandemic literature shows that self-compassion is associated with lower body dissatisfaction, social physique anxiety, drive for thinness, and body image disturbance (for a review, see Braun et al., 2016), as well as higher indices of positive body image (e.g., Homan & Tylka, 2015; Siegel et al., 2020; Swami et al., 2019). In addition, randomised controlled trials aimed at cultivating self-compassion have produced significant reductions in body image concerns (see Linardon et al., 2018). Greater self-compassion is also negatively associated with factors that increase the risk of negative body image, such as the internalisation of appearance ideals (Tylka et al., 2015), appearance comparisons (Perey & Koenigstorfer, 2020), and shape and weight overvaluation (Linardon et al., 2020). In short, the evidence – at least prior to the onset of the COVID-19 pandemic – indicates that self-compassion may protect against negative body image.

1.1. The Present Study

Here, we aimed to examine whether COVID-19-related stress is associated with body image disturbance. In the first instance, we focused on COVID-19-related stress given evidence that this construct is uniquely associated with body image outcomes (Swami et al., 2021). In the second instance, we focused on body image disturbance, which can be defined as a "a persistent report of dissatisfaction, concern, and distress that is related to an aspect of appearance. … [and] some degree of impairment in social relations, social activities, or occupational functioning" (Thompson et al., 1999, p. 11). That is to say, our outcome

measure here is an index of body image dysfunction (Cash, 2002a, 2002b; Cash et al., 2004) that goes beyond the constructs of negative body image that have been the focus in previous work (Swami et al., 2021). We hypothesised that greater COVID-19-related stress would be significantly associated with greater body image disturbance.

Second, we examined the extent to which self-compassion mediated the relationship between COVID-19-related stress and body image disturbance. Although some studies have considered self-compassion to act as a moderator (e.g., Linardon et al., 2020), it also likely that self-compassion acts through multiple pathways that include mediation (i.e., partially or fully explaining the relationship between predictor and criterion variables; Braun et al., 2016). Indeed, there is considerable evidence that self-compassion mediates the relationships between predictor variables and body image outcomes (e.g., Duarte et al., 2015; Ferreira et al., 2019; Swami et al., 2019). Based on this work, we hypothesised that greater COVID-19-related stress would be associated with lower self-compassion, but also that greater self-compassion would in turn be associated with lower body image disturbance (see Figure 1).

2. Method

2.1. Participants

Participants were 296 women and 304 men from the United Kingdom who ranged in age from 18 to 73 years ($M = 34.64$, $SD = 12.31$) and in self-reported body mass index (BMI) for 13.26 to 45.72 kg/m^2 ($M = 24.79$, $SD = 4.81$). The majority of participants (85.0%) were White, 9.0% were Asian, 1.7% were Black, 4.0% were mixed race, and 0.3% were of another ancestry. In terms of sexual orientation, 87.3% were heterosexual, 2.7% were gay/lesbian, 7.7% were bisexual, and the remainder were of another orientation. A total of 31.3% were single, 37.3% were partnered but not marred, 27.5% were married, and the remainder had another relationship status.

2.2. Materials

    2.2.1. Body image disturbance. The survey package included the Body Image Disturbance Questionnaire (BIDQ; Cash et al., 2004), a 7-item measure that assesses experiences of body dissatisfaction, associated preoccupations, distress, impairment, and interference to one's life. Response options varied by item, but all were rated on 5-point scales. Open-ended follow-up questions intended for use in clinical settings were omitted here. An overall score was computed as the mean of all 7 items, with higher scores reflecting greater body image disturbance. Scores on the BIDQ have been shown to be unidimensional, with adequate internal consistency and good concurrent, discriminant, construct, and incremental validity in both women and men (Cash et al., 2004). McDonald's ω in the present study was .93 (95% CI = .91, .94; Cronbach's alpha = .92) for women and .92 (95% CI = .90, .93; Cronbach's alpha .92) for men.

    2.2.1. COVID-19-related stress. Participants were asked to respond to 5 items about how stressed they felt about the impact of the COVID-19 pandemic on their daily lives, personal relationships, work and/or studies, finances, and future (Swami et al., 2021). All items were rated on a 7-point scale (1 = *not at all stressed*, 7 = *extremely stressed*). An overall score was computed as the mean of all 5 items, with higher scores indicating greater COVID-19-related stress. Swami and colleagues (2021) reported that scores on this measure had a 1-dimensional factor structure, adequate internal consistency, and good evidence of construct validity in women and men. McDonald's ω in the present study was .84 (95% CI = .81, .87; Cronbach's alpha .83) for women and .88 (95% CI = .86, .90; Cronbach's alpha .88) for men.

    2.2.3. Self-compassion. Self-compassion was measured using the Short Form of the Self-Compassion Scale (SCS; Raes et al., 2011). This is a 12-item instrument that measures each of the components of self-kindness, self-judgement, common humanity, isolation,

mindfulness, and over-identification. Each item was rated on a 5-point scale ranging from 1 (*almost never*) to 5 (*almost always*) and an overall score was computed as the mean of all 12 items, with higher scores reflecting greater self-compassion. Scores on the short form of the SCS have a 1-dimensional factor structure, are strongly correlated with scores on the full form, have adequate internal consistency, and evidence good convergent and incremental validity in women and men (Raes et al., 2011). McDonald's ω in the present study was .85 (95% CI = .82, .87; Cronbach's alpha .85) for women and .80 (95% CI = .76, .83; Cronbach's alpha = .80) for men.

2.2.4. Demographics. For descriptive purposes, participants were asked to self-report their age, gender identity, ethnicity, sexual orientation, and relationship status. Participants were also asked to self-report their height and weight, which we used to compute BMI as kg/m^2.

2.3. Procedures

The project received ethics approval from the School ethics committee at [blinded for review] and all data were collected via the Prolific website on January 14, 2021, when the United Kingdom was under a near-total lockdown (Cabinet Office, 2021). The project was advertised as a study on "psychological well-being under conditions of social-distancing" with an estimated completion time (8 min), and potential respondents were eligible for participation if they were adult citizens and residents of the United Kingdom and fluent in English. Prolific ID codes and IP addresses were checked to ensure that no participant completed the survey more than once. After providing digital informed consent, participants were directed to the scales described above, which were presented in a counter-balanced order in Qualtrics^{TM}. The survey was anonymous and participants were paid £0.67. All participants received debriefing information upon completion of the survey.

3. Results

3.1. Preliminary Analyses

Less than 0.3% of the total dataset were missing; these data were missing completely at random, $\chi^2(62) = 42.55$, $p = .972$. Given the minimal missing data, these were replaced using the mean replacement method. We examined gender differences on all variables using independent-samples t-tests. The results, with α corrected to $p = .05/3 = .017$ to control for Type I error, showed that women had significantly higher body image disturbance and COVID-19-related stress compared with men, whereas men had significantly higher self-compassion compared to women. Descriptive statistics, gender difference comparisons, and inter-scale correlations are reported in Table 1. As can be seen, COVID-19-related stress was positively associated with body image disturbance in both women and men, whereas self-compassion was negatively associated with both COVID-19-related stress and body image disturbance, respectively, in women and men.

Table 1

Descriptive Statistics, the Results of Independent Samples t-Tests Examining Gender Differences, and Bivariate Correlations between All Variables for Women (Top Diagonal) and Men (Bottom Diagonal).

		(1)	(2)	(3)
(1) Body image disturbance			.24*	-.42*
(2) COVID-19-related stress		.25*		-.22*
(3) Self-compassion		-.41*	-.22*	
Women	M	2.16	4.64	2.81
	SD	0.87	1.33	0.63
Men	M	1.85	4.07	3.03
	SD	0.75	1.48	0.58

t^a	4.63	5.01	4.47
d	0.38	0.41	0.37

Note. [a]All ps < .001 significant at Bonferroni-corrected p = .017; *p < .05, **p < .001.

3.2. Mediation Analyses

To establish the robustness of indirect effects in our mediation model (see Figure 1), the bootstrap method was used to conduct mediation analyses (Hayes, 2017). As recommended by Preacher and Hayes (2008), 5,000 bootstrap samples were drawn from the dataset to calculate indirect and direct effects, as well as bias-corrected 95% CIs. Effects were considered to be significant if the respective CI did not overlap zero (Mallinckrodt et al., 2006), with confidence intervals computed by determining the indirect effect at the 2.5 and 97.5 percentiles.
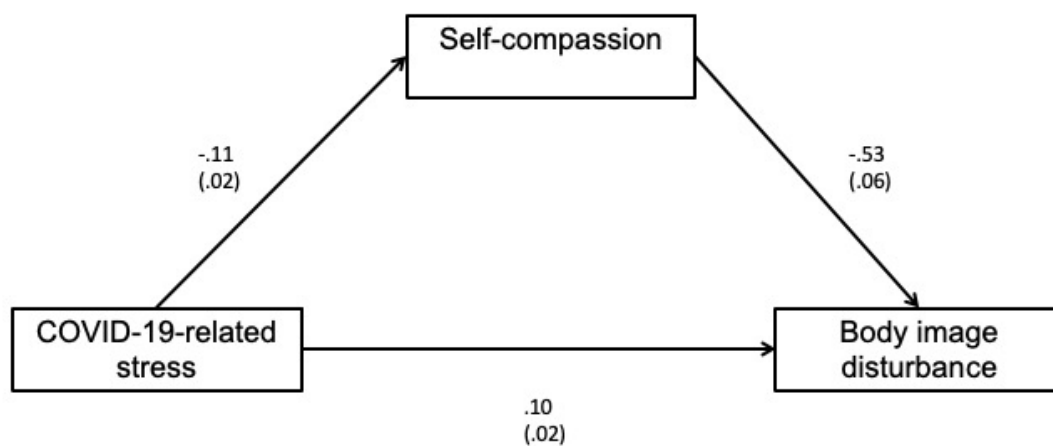
Figure 1. Regression coefficients with standard error in brackets, all ps <.001.

The effect of COVID-19-related stress on body image disturbance was mediated via self-compassion. As Figure 1 illustrates, the standardised regression coefficient between COVID-19-related stress and self-compassion was statistically significant, as was the standardised regression coefficient between self-compassion and body image disturbance. The standardised indirect effect was (-0.250)*(-0.392) = 0.098. The standardised direct effect was 0.169 after controlling for mediation, and the standardised total effect was 0.267 (R^2 = .216). We tested the significance of this effect using bootstrapping procedures. The bootstrapped indirect effect was .098 (95% CI = .036, .079). As zero was not within the CI, the indirect effect was statistically significant.

Next, we examined whether the relationships in the model were comparable across women and men. For women, the standardised indirect effect was .086, and the direct effect was .149 (after controlling for mediation), with a total effect of .235 (R^2 = .190). The bootstrapped unstandardized indirect effect was .086, and the 95% CI ranged from .026 to .092, indicating that the indirect effect was statistically significant for women. For men, the indirect effect was .083 and the direct effect was .163 (after controlling for mediation), with a total effect of .246 (R^2 = .190). The bootstrapped unstandardized indirect effect was .086, and the 95% CI ranged from .026 to .092, indicating that the indirect effect was statistically significant for men. The coefficients for all pathways were similar across women and men (see Supplementary Figure 1 and 2), and Wald tests indicated that the strength of each path did not differ significantly by gender (all ps > .065).

Finally, we examined whether self-compassion moderates the relationship between COVID-19 related-stress and body image disturbance. The results indicated that self-compassion does not moderate the relationship (R^2 = .217, β = -.040, βse = .035, t = -.035, p = .314).

4. Discussion

A small body of work has shown that body image concerns have increased under conditions of lockdown (Roberts et al., 2020) and that COVID-related stress is uniquely associated with negative body image (Swami et al., 2021). Broadly outlined, our findings are consistent with such reports: here, we found that the stress triggered by the COVID-19 pandemic was significantly associated with body image disturbance in both women and men. That is, our findings suggest that the COVID-19 pandemic may be having an impact on day-to-day body image experiences that go beyond mere dissatisfaction to include extreme concern and distress that impairs social relations, activities, and functioning (cf. Cash et al., 2004; Thompson et al., 1999). This is important because, according to cognitive-behavioural models (Cash, 2011), body image disturbance – distinct to negative body image (Sharpe et al., 2018) – is a key causal factor in the development, persistence, and relapse of disordered eating (e.g., Fairburn et al., 2003; Phillipou et al., 2018).

There may be a number of ways in which COVID-19-related stress affects body image disturbance. First, changing eating patterns under conditions of lockdown (Ammar et al., 2020), combined with sociocultural narratives that warn against weight-gain during the pandemic (Swami et al., 2021) and increased exposure to unrealistic appearance ideals (Vall-Roqué et al., 2020), may lead to an overvaluation of appearance, particularly in terms of weight and shape, and a belief that appearance is integral to self-worth. At the same time, conditions of lockdown also mean that individuals have limited opportunities to control their weight and shape – for instance, due to limited opportunities to exercise and access beauty services (Pikoos et al., 2020; Swami et al., 2020). COVID-19-related stress may also amplify maladaptive body image coping mechanisms: for instance, individuals may be prone to engaging in body checking (i.e., hypervigilant monitoring of shape and weight), which contributes to and reinforces distress (Kraus et al., 2015).

Here, we also extended knowledge by showing that self-compassion mediated the relationship between COVID-19-related stress and body image disturbance. Specifically, we first found that COVID-19-related stress was associated with lower self-compassion. This is consistent with recent work showing that greater fear of COVID-19 (Mohammadpour et al., 2020) and greater perceived threat from COVID-19 (Kavaklı et al., 2020) are associated with lower self-compassion. It is possible that greater COVID-19-related stress, particularly under conditions of lockdown, mean that individuals have fewer opportunities to engage in self-compassion. For instance, lockdown may mean that individuals have limited real or perceived ability to control their circumstances, which in turn may impede compassionate problem-solving and avoidance-oriented coping strategies, while increasing self-criticism and self-pity (see Allen & Leary, 2010).

Nevertheless, the results of our study also showed that greater self-compassion was associated with lower body image disturbance, which is consistent with previous findings (for a review, see Braun et al., 2016). It may be that individuals high in self-compassion are more likely to respond adaptively to COVID-19-related stress. For instance, highly self-compassionate individuals may be more able to fully and openly experience body image concerns and relevant outcomes (e.g., the impact of body image concerns on day-to-day functioning) so as to engage in adaptive coping behaviours (e.g., eating intuitively) (Sandoz et al., 2013). Self-compassion may also be associated with other protective factors, such as greater body appreciation, which may minimise the impact of other risk factors for body image disturbance, such as the idealisation of unrealistic appearance ideals (Braun et al., 2016).

Limitations of the present study include the reliance on a cross-sectional design, which limits our ability draw causal inferences, although our findings are consistent with experimental studies (Braun et al., 2016). In addition, we measured the psychological impact

of the COVID-19 pandemic using a single construct, namely COVID-19-related stress. Although this construct has been reliably associated with body image outcomes in previous work (Swami et al., 2021), it would be useful to include additional variables in future work, such as fear of COVID-19 (Ahorsu et al., 2021) and COVID-19 concerns (e.g., on health services, personal safety; Bacon & Corr, 2020). In a similar vein, the use of the Short Form of the Self-Compassion Scale means we were unable to assess the explanatory power of lower-order facets of self-compassion, which could be rectified in future work through use of the full form of the measure.

These limitations aside, our work points to an important pathway through which the COVID-19 pandemic may lead to the development and exacerbation of eating pathology (Touyz et al., 2020; Weissman et al., 2020). It is, therefore, imperative to develop novel strategies to minimise the impact of the COVID-19 pandemic on body image disturbance. One such strategy that holds promise is the promotion of self-compassion: being able to express and demonstrate self-compassion may be particularly helpful in times of increased stress and isolation. Exercise designed to promote self-compassion via smartphones may be particularly beneficial in this regard (Schnepper et al., 2020), although their efficacy at reducing body image disturbance under lockdown will first need to be established.

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Supplementary Materials
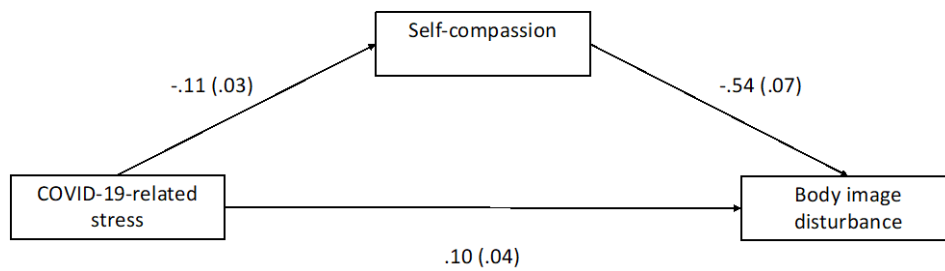
Supplementary Figure 1. Regression coefficients (with standard error) for the mediation model in the female subsample (*n* = 294). All *p*s <.001.
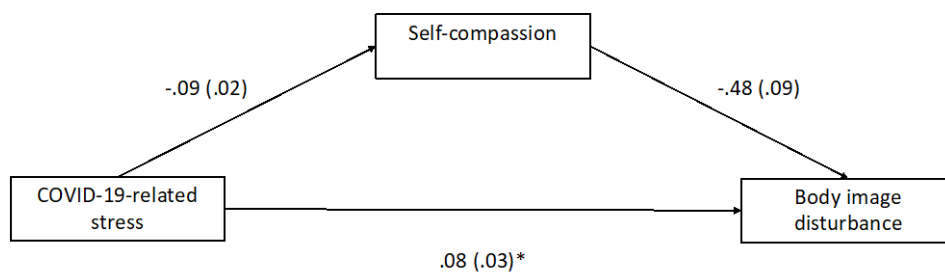
Supplementary Figure 2. Regression coefficients (with standard error) for the mediation model in the male subsample (*n* = 306). All *p*s <.001, except *, where *p* = .009.