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Self-Compassion Buffers the Psychological Distress from Perceived Discrimination Among Socioeconomically Disadvantaged Emerging Adults: A Longitudinal Study

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Abstract

Objectives This longitudinal study among socioeconomically disadvantaged people examined self-compassion (SC) as a protective factor in the association between perceived discrimination and psychological distress, with a consideration of the specific contributions of aspects of self-compassion in its buffering effect, including compassionate self-responding (CS), reduced uncompassionate self-responding (RUS), or both (overall SC).

Methods Data were collected from 528 socioeconomically disadvantaged Chinese university students through electronic questionnaires on perceived discrimination, self-compassion, and psychological distress (i.e., depressive, anxiety, and stress symptoms) in two waves with a 1-year interval.

Results Only CS moderated the relationships between perceived discrimination and all three indicators of psychological distress; overall, SC and RUS did not play moderating roles in these relationships.

Conclusions CS buffered the impact of perceived discrimination on subsequent psychological distress. This suggests that the protective function of self-compassion might lie mainly in the role played by CS in psychopathological domains (e.g., depression, anxiety, stress, rumination, negative affect) or in the stressor-psychological distress link.

Keywords Self-compassion · Perceived discrimination · Psychological distress · Buffering effect · Compassionate self-responding · Reduced uncompassionate Self-responding

Perceived discrimination due to socioeconomic disadvantage (also called socioeconomic discrimination, socioeconomic status/position discrimination, perceived social class discrimination) has been investigated among various groups of people (e.g., African Americans, Chinese migrant children) in recent years (Haeny et al., 2019; Song et al., 2020). Perceived discrimination refers to a perception in interacting with others of stigmatization and unfair treatment (e.g., relatively deficient education resources) related to one's

socioeconomic disadvantage is individuals' perceptions of such discrimination based on their low social status (due to educational attainment, occupation, or economic condition). Being treated unfairly and looked down upon by others due to low socioeconomic status (SES), such as having a low family income or working in a labor-intensive job with poor working conditions, makes individuals vulnerable and more likely to perceive discrimination. Perceived discrimination related to low SES is seen as a stressor and associated with negative consequences such as poor health status and behavioral problems (e.g., initiating alcohol use) (Haeny et al.,

own devalued or threatened social identity (Link & Phelan,

2001; Schmitt et al., 2014). Perceived discrimination due to

One of the important negative impacts of perceived discrimination is psychological distress (e.g., depressive symptoms) (Gamarel et al., 2012; Wu et al., 2021a). Individuals who face discrimination based on socioeconomic disadvantage usually have higher levels of psychological distress. For example, perceived discrimination due to socioeconomic

2019; Van Dyke et al., 2016).

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disadvantage has been found positively associated with depressive and anxiety symptoms among socioeconomically disadvantaged college students and gay and bisexual men (Gamarel et al., 2012; Wu et al., 2021a). Self-compassion, which is regarded as a substantial emotional self-regulation strategy and self-related resource, is a potential protective factor that could alleviate the negative impacts of perceived discrimination due to socioeconomic disadvantage on psychological distress (Neff, 2003; Wu et al., 2021b).

Self-compassion refers to individuals' positive responses toward themselves when facing life difficulties and suffering, and indicates a response characterized by self-kindness and a lack of self-judgement, an understanding of personal suffering as part of the human experience rather than an isolated experience, and dealing with suffering in a balanced way rather than by over-identifying with negative emotions and thoughts (Gilbert et al., 2017; Neff et al., 2019). Neff's construct of self-compassion has been popular in empirical research over the last two decades. Neff et al. (2018, 2019) defined self-compassion as a holistic system of six components that could be grouped into compassionate self-responding (CS) (self-kindness, common humanity, and mindfulness) and reduced uncompassionate responding (RUS) (reduced self-judgement, isolation, and over-identification).

A positive function of self-compassion on physical health (e.g., functional immunity, sleep, composite health behavior) and well-being (e.g., life satisfaction, positive affect) has been found in a large number of studies (for meta-analysis, see Phillips & Hine, 2021; Zessin et al., 2015). A causal relationship between self-compassion and positive health outcomes is supported by the finding that multiple sessions of self-compassion interventions improved physical health and health behavior (Phillips & Hine, 2021). Self-compassion is also associated with prosocial responses (e.g., forgiveness) through cognitive and emotional mechanisms (alleviating anger, reducing rumination) (Wu et al., 2019).

Moreover, many studies have found that self-compassion is negatively associated with interpersonal and social stress (including discrimination) and investigated how this coping strategy could buffer the adverse effects of discrimination (e.g., racial discrimination) and stigma (e.g., sexuality-related stigma) on psychological distress (Chan et al., 2020; Liu et al., 2020). Self-compassion and social connectedness were found to work together to buffer the effect of racial discrimination on depression among Asian Americans (Liu et al., 2020). The positive association between stigma stress and psychological distress (e.g., depressive and anxiety symptoms) was weaker among lesbian, gay, and bisexual individuals with high levels of self-compassion than those with low levels of selfcompassion (Chan et al., 2020). Thus, it is possible that selfcompassion works as an emotional self-regulation strategy and self-related resource that buffers the effect on psychological distress of perceived discrimination due to socioeconomic disadvantage.

Some studies have found that particular aspects of self-compassion (presence of positive self-responding: CS; absence or decrease of negative self-responding: RUS; self-compassion including both CS and RUS: overall SC) might make different contributions to buffering the negative effect of stressors (e.g., life stress, COVID-19-related threat) on psychological distress (e.g., depressive and anxiety symptoms) (Lau et al., 2020; Salinger & Whisman, 2021). Sick et al. (2020) found that overall SC and CS played moderating roles in the association between body shame and depressive symptoms among women. For women with lower levels of self-compassion and CS, body shame was associated with depressive symptoms. Lau et al. (2020) discovered that both CS and uncompassionate responding moderated the relationship between COVID-19-related threat and psychological distress at the first peak of Hong Kong's outbreak. However, Salinger and Whisman (2021) found that neither overall SC nor any of its components moderated the association between life stress and depressive symptoms among female university students.

Although associations between perceived discrimination due to socioeconomic disadvantage and psychological distress have been found in previous studies (Gamarel et al., 2012; Song et al., 2020), the specific contributions of aspects of selfcompassion (CS, RUS, or overall SC) in its buffering effect on this association have not been examined. It is especially useful to investigate these effects with a longitudinal design, as findings from cross-sectional research are somewhat limited regarding the directionality of the effects and predictability of the associations between variables (Chan et al., 2020; Sick et al., 2020). Thus, the present study of socioeconomically disadvantaged individuals adopted a longitudinal design to examine the moderating effects of self-compassion in the association between perceived discrimination and psychological distress with the consideration of its specific aspects (presence of positive self-responding: CS; absence or decrease of negative self-responding: RUS; both CS and RUS: overall SC). Based on the findings of the majority of studies, it was expected that overall SC, CS, and RUS could buffer the effect on psychological distress of perceived discrimination due to socioeconomic disadvantage, such that this positive association would be weaker among individuals with high levels of self-compassion than those with low levels of self-compassion.

Methods

Participants

This study was a part of a larger project on the relationship between health and academic performance among Chinese university students. Data from 528 socioeconomically



disadvantaged students (287 female and 241 male) who participated in the surveys at two waves were used. There were a very small number of missing values for demographic variables at wave 1 (age: 1; family monthly income: 9) and key variables at wave 2 (psychological distress: 1). The average age of the participants at the baseline survey was 20.81 (SD=1.36). The educational attainment of 30.1% of participants' fathers and 54.7% of participants' mothers was primary school or below. Their average family monthly income was RMB 5032.31 (SD=5989.29).

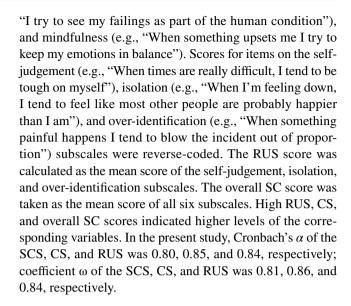
Procedures

Socioeconomically disadvantaged students were identified by specific eligibility criteria (e.g., low average annual per capita household income, family financial problems due to serious diseases) and recruited through the student affairs officers of the university. Ethical approval was obtained from the research ethics committee of the Guangzhou City University of Technology before data collection. Students who were interested in the project initially signed an informed consent form and completed electronic questionnaires for the baseline survey. Students voluntarily participated in the survey and received credit for their participation that could also be obtained in other ways (e.g., participating in other activities, attending academic lectures). One year after the baseline survey, the participants were invited to complete electronic questionnaires at wave 2.

Measures

Perceived Discrimination Perceived discrimination due to socioeconomic disadvantage was assessed using the 6-item perceived discrimination scale (Shen et al., 2009). Participants reported their perceived social class discrimination on a 5-point Likert scale (from 1 = strongly disagree to 5 = strongly agree). An example item was "I feel that people treat me differently because of my family social class background." The mean score of all items was calculated, with a high score representing a higher level of perceived discrimination. Previous studies have reported adequate reliability of this scale among college students and low-SES populations (e.g., left-behind adolescents) in China (Liu et al., 2021; Zhao et al., 2020). Coefficient omega (ω) and Cronbach's alpha (α) of the scale in the present study were 0.88.

Self-compassion The Chinese version of the Self-Compassion Scale (SCS) was used to assess participants' self-compassion (Chen et al., 2011; Neff, 2003). The 26 items were measured on a 5-point Likert scale (from 1 = almost never to 5 = almost always). The CS score was the mean score of the subscales of self-kindness (e.g., "I'm kind to myself when I'm experiencing suffering"), common humanity (e.g.,



Psychological Distress The 21-item Chinese version of the Depression-Anxiety-Stress Scale (DASS-21) (Lovibond & Lovibond, 1995; Wen et al., 2012) was used to assess students' psychological distress, with subscales of depression (e.g., "I couldn't seem to experience any positive feeling at all"), anxiety (e.g., "I was aware of dryness of my mouth"), and stress (e.g., "I felt that I was using a lot of nervous energy"). Participants responded on a 4-point scale (from 1 = did not apply to me at all to 4 = applied to me very much). The mean score of each subscale was calculated, with a high score representing a high level of depressive symptoms, anxiety symptoms, and stress symptoms. In the present study, at wave 1 and wave 2, respectively, Cronbach's α of the depression subscale was 0.85 and 0.89 and coefficient ω of the depression subscale was 0.85 and 0.89, Cronbach's α of the anxiety subscale was 0.83 and 0.84 and coefficient ω of the anxiety subscale was 0.84 and 0.86, Cronbach's α of the stress subscale was 0.83 and 0.88 and coefficient ω of the stress subscale was 0.83 and 0.88.

Data Analyses

SPSS version 24 was used to conduct the initial analysis (i.e., descriptive statistics, correlations) and moderation analyses. The moderating roles of overall SC, CS, and RUS in the association between perceived discrimination and psychological distress (i.e., depressive symptoms, anxiety symptoms, and stress symptoms) were examined in three steps (with one moderator and one dependent variable at a time). Psychological distress at wave 2 was regressed by perceived discrimination at wave 1 in step 1 and by perceived discrimination and moderators (overall SC, CS, or RUS) at wave 1 in step 2 through hierarchical regression analysis. In step 3, the SPSS macro PROCESS (model 1; Hayes, 2018) was used to conduct nine moderation analyses,



each of which examined the main effects of mean-centered perceived discrimination, a moderator (i.e., overall SC, CS, RUS) and their interaction term at wave 1 on one indicator of psychological distress (i.e., depressive symptoms, anxiety) at wave 2. Simple slope analyses were performed to examine the conditional slope of the relationship between predictor (perceived discrimination) and outcome (psychological distress) at high and low levels (low: $M - \ge 1 \times SD$; high: $M + \ge 1 \times SD$) of each moderator (CS, RUS, overall SC). A Bonferroni correction was used to account for the additive effects of type 1 error due to the large number of regression analyses. Thus, p values of less than 0.006 = 0.05/9 were considered statistically significant. Because PROCESS deals with missing values by listwise deletion, 11 of 528 cases were excluded from moderation analyses for missing values on any of the control variables or key variables in the model. Demographic variables (age, gender, average parental education level, family monthly income) and psychological distress at wave 1 were controlled in the analysis.

Results

Table 1 displays the descriptive statistics (i.e., *M* and *SD*) for, and correlations among, the key variables. Perceived discrimination was negatively associated with overall SC, CS, and RUS at wave 1 and positively associated with all three indicators of psychological distress (depressive symptoms, anxiety symptoms, and stress symptoms) at both waves. Overall, SC was positively associated with CS and RUS. Overall SC, CS, and RUS were negatively associated with psychological distress in both waves.

Detailed results for the estimation of perceived discrimination on subsequent psychological distress (step 1) and the estimations of perceived discrimination with the predicted moderators (overall SC, CS, or RUS) on subsequent psychological distress (step 2) are displayed in Table S in the Supplementary Materials. After controlling for the main effects, the interaction effects of perceived discrimination and CS were significant in predicting the subsequent three indicators of psychological distress (depressive symptoms, anxiety symptoms, and stress symptoms) at wave 2. Specifically, the interaction effects of perceived discrimination and CS explained an additional 1.6% of the variance in depressive symptoms (p = 0.0012), an additional 1.4% of the variance in anxiety symptoms (p = 0.0023), and an additional 1.6% of the variance in stress symptoms (p = 0.0007). The interaction effects of perceived discrimination and RUS and overall SC were not significant in predicting any indicator of psychological distress. Detailed results are provided in Table 2.

Simple slope analyses were conducted to further examine the relationship between perceived discrimination and psychological distress at high $(M+\geq 1\times SD)$ and low $(M-\geq 1\times SD)$ levels of CS. At a low level of CS, perceived discrimination at wave 1 was associated with higher levels of subsequent depressive symptoms (low level: b=0.157, p<0.001), anxiety symptoms (low level: b=0.116, p<0.001), and stress symptoms (low level: b=0.160, p<0.001) at wave 2. At a high level of CS, perceived discrimination at wave 1 was not associated with higher levels of psychological distress at wave 2 (depressive symptoms: b=0.020, p=0.542; anxiety symptoms: b=0.03, p=0.907; stress symptoms: b=0.014, p=0.669). The plots of the relationship between perceived discrimination at wave 1 and

Table 1 Descriptive statistics and correlations among key variables

Variable	1	2	3	4	5	6	7	8	9	10
1. PD W1	-									
2. Overall SC W1	48 ^{***}	-								
3. CS W1	14**	.68***	-							
4. RUS W1	54***	.75***	.03	-						
5. DS W1	.41***	53***	28***	48***	-					
6. DS W2	.27***	34***	14**	34***	.46***	-				
7. AS W1	.35***	49***	22***	47***	.78***	.43***	-			
8. AS W2	.24***	32***	13**	32***	.45***	.85***	.49***	-		
9. SS W1	.40***	52***	23***	50***	.76***	.44***	.80***	.47***	-	
10. SS W2	.29***	35***	- .16***	34***	.45***	.83***	.45***	.84***	.53***	-
M	2.52	3.21	3.48	2.94	1.51	1.41	1.54	1.38	1.69	1.56
SD	0.76	0.36	0.47	0.52	0.48	0.50	0.48	0.44	0.50	0.53

Note: *PD* perceived discrimination, *Overall SC* overall self-compassion, *CS* compassionate self-responding, *RUS* reduced uncompassionate self-responding, *DS* depressive symptoms, *AS* anxiety symptoms, *SS* stress symptoms, *WI* wave 1, *W2* wave 2. CS is the mean score of the self-kindness, common humanity, and mindfulness subscales. RUS is the mean score of the self-judgement, isolation, and over-identification subscales (items were reversed). Overall SC is the mean score of all six subscales. *p < .05, **p < .01, ***p < .001



Table 2 Estimations from wave 1 perceived discrimination, wave 1 moderators (overall SC, CS, RUS) and their interactions on wave 2 psychological distress

Outcome	Depressive symptoms					Anxiety symptoms					Stress symptoms				
	b	SE	p	R^2	ΔR^2	\overline{b}	SE	p	R^2	ΔR^2	\overline{b}	SE	p	R^2	ΔR^2
Moderator: overall SC				.247	.009				.255	.005				.298	.004
PD	.048	.030	.106			.029	.026	.272			.051	.031	.098		
Overall SC	173	.070	.014			122	.060	.042			135	.071	.057		
$PD \times overall SC$	164	.067	.014			102	.058	.079			-122	.068	.074		
Moderator: CS				.246	.016*				.259	.014*				.307	.016**
PD	.088	.029	.002			.059	.024	.015			.087	.029	.003		
CS	019	.043	.655			018	.037	.639			036	.044	.401		
$PD \times CS$	147	.045	.001			120	.039	.002			156	.046	.001		
Moderator: RUS				.239	0				.252	.001				.294	.001
PD	.038	.031	.231			.025	.027	.365			.053	.032	.098		
RUS	117	.048	.015			082	.042	.051			068	.049	.171		
$PD \times RUS$	006	.038	.883			.024	.034	.478			.039	.039	.327		

PD perceived discrimination, Overall SC overall self-compassion, CS compassionate self-responding, RUS reduced uncompassionate self-responding. Outcomes at wave 1 and demographic variables (age, gender, family monthly income, and parental educational level) were controlled in the moderation analyses. All significant interaction effects are labeled in bold. To account for the additive effects of type 1 error, a Bonferroni correction was applied and p values were corrected: *p < .006 (=0.05/9), **p < .001(=0.01/9), ***p < .0001 (=0.001/9)

psychological distress at wave 2 at different levels of CS and overall SC are displayed in Figs. 1, 2, and 3.

Discussion

In this study, the buffering effects of self-compassion in the association between perceived discrimination due to socioeconomic disadvantage and psychological distress were examined with a consideration of the specific aspects (CS, RUS, or overall SC) of self-compassion, in a longitudinal design with a sample of emerging adults (university students). The hypotheses were partially supported. CS was found to have moderated the relationship between perceived discrimination and subsequent psychological distress. Specifically, this significant association was found among emerging adults with lower levels of CS. The interaction between perceived discrimination and CS at wave 1 was found to be significant in predicting psychological distress (depressive symptoms, anxiety symptoms, stress symptoms) at wave 2. The interaction between perceived discrimination and overall SC/RUS at wave 1 was not significant in predicting any indicators of psychological distress.

We found that CS played a protective role in buffering the impact of perceived discrimination on subsequent psychological distress. Specifically, perceived discrimination had a strong effect on psychological distress for socioeconomically disadvantaged individuals with low CS but no significant effect for those with high CS. This is consistent with previous studies in which CS was found to have attenuated the

adverse effect of stressors (e.g., COVID-19-related threats, experiential avoidance) on psychological distress (Farr et al., 2021; Lau et al., 2020). In these studies, the relationship between these stressors and psychological distress was weaker for individuals with high levels of CS than for those with low levels of CS. Similarly, in the present study, high CS was associated with a greater likelihood of responding to perceived discrimination due to socioeconomic disadvantage with self-kindness, to view it as part of the human experience, and to recognize it in a mindful manner. These positive responses toward the self are psychological resources that can help individuals to alleviate the detrimental effects of perceived discrimination on their mental health.

Moreover, the finding that CS rather than RUS moderated the relationship between perceived discrimination and psychological distress indicates that the main contributor to the protective function of self-compassion was CS. A potential explanation for this finding lies in a specific characteristic of our sample of socioeconomically disadvantaged college students. Because individuals with more years of formal education are more likely to make an external attribution of economic outcomes (Davidai, 2022), college students, who are unlikely to be economically independent, may attribute their socioeconomic disadvantage and what they suffer from it to their family rather than themselves. Moreover, although many college students live on small incomes, most regard this situation as temporary (Cozzarelli et al., 2001). Socioeconomically disadvantaged college students with resilience are inclined to believe that this situation can be changed by their capabilities and efforts (Zheng, 2010). Thus, they are less likely to engage



Fig. 1 Plots of the interaction of wave 1 perceived discrimination and CS on wave 2 depressive symptoms. Note: PD = perceived discrimination, CS = compassionate self-responding

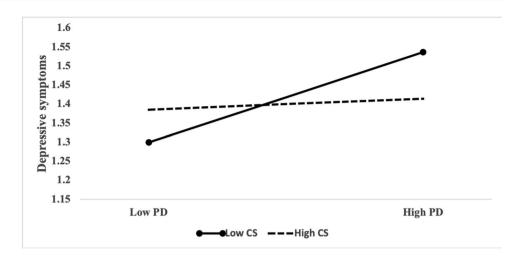


Fig. 2 Plots of the interaction of wave 1 perceived discrimination and CS on wave 2 anxiety symptoms. Note: PD = perceived discrimination, RUS = reduced uncompassionate self-responding

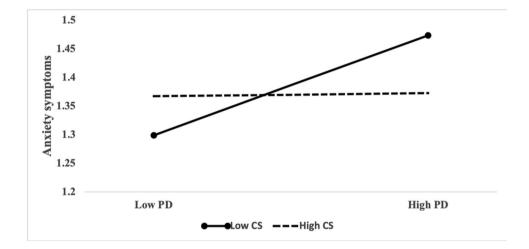
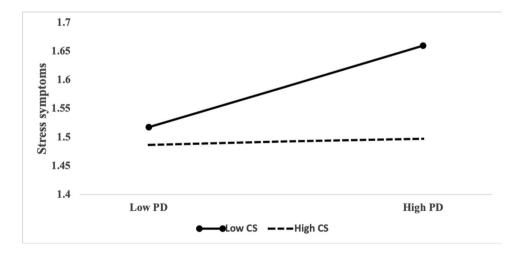


Fig. 3 Plots of the interaction of wave 1 perceived discrimination and CS on wave 2 stress symptoms. Note: PD=perceived discrimination, CS=compassionate self-responding



in self-criticism when perceiving discrimination and elements of RUS, such as reduced self-judgement, are thus ineffective in reducing the negative effect of perceived discrimination on psychological distress.

Another possible reason for this finding is cultural differences in the conceptualization of self and attitudes toward uncompassionate self-responding. Westerners tend to highlight stability and consistency of self-concept, whereas East Asians tend to take a dialectical view that is open to



contradiction (e.g., both compassionate and uncompassionate self-responding) (Boyraz et al., 2021). Compared with Westerners, East Asians have a more accepting attitude toward the co-existence of positivity and negativity (e.g., positive and negative emotions) and believe they can transform into each other (Miyamoto & Ryff, 2011). For instance, Wu et al. (2020) assigned more than 70% of their Chinese college student participants to two dialectical self-compassion profiles (with moderate or high levels of both compassionate and uncompassionate self-responding). Uncompassionate self-responding is considered self-deprecation in Western cultures, whereas it is seen as helpful for adaptive functions like self-improvement among East Asians (Hamamura & Heine, 2008). This would account for reduced uncompassionate self-responding not protecting individuals from perceived discrimination in the present study. For more validity and consistency, it would be helpful to examine the moderating role of RUS in other East Asia countries (e.g., Japan) with a longitudinal design.

Moreover, we found a non-significant moderation effect of overall SC in the association between perceived discrimination and psychological distress. This finding echoes those of previous studies in which the inclusion of RUS in overall SC was found to inflate the relation between self-compassion and psychological distress, thus inhibiting the investigation of the protective function of self-compassion and its unique contribution in a psychopathological context (Muris et al., 2021). RUS might obscure the buffering effect of CS if it is added to CS to form an overall self-compassion (e.g., as a sum or average score on the SCS).

The findings of this study have some theoretical implications, as they provide an insight into the workings of the moderation effect of self-compassion (i.e., the presence of positive self-responding, of less negative self-responding, or both) in the association between perceived discrimination and subsequent psychological distress. Specifically, CS was found to have played a moderating role in this association among socioeconomically disadvantaged emerging adults with a longitudinal design. This suggests that when researchers investigate the moderation effect of self-compassion within the domains of psychopathology (e.g., depression, anxiety, stress, rumination, negative affect) or in the stressorpsychological distress link, CS may be better than overall SC (total or average SCS score) in presenting a protective nature (Muris et al., 2021). If total or average SCS score is used, post hoc sensitivity analyses with additional moderation models are necessary to examine whether there are different moderating effects of CS and overall SC (Sick et al., 2020), especially in the context of psychopathology.

Limitations and Future Research

Several limitations of the study need to be considered. First, external validity is limited, and the findings only show the buffering effect of self-compassion in the association between perceived discrimination due to socioeconomic disadvantage and psychological distress. The findings of the present study should thus be interpreted cautiously, and the specific contribution of aspects of self-compassion to its buffering effect in the association between other stressors (e.g., work stress, family stress) and other outcomes (e.g., well-being) should be a focus of separate studies in the future. Second, the current study is limited by the homogeneity of the sample in age, educational level (college students), and SES. The moderation models could be replicated in other age groups (e.g., middle or late adulthood) or education groups (e.g., people with low education levels) in future research. Third, a self-report questionnaire was used for data collection in the present study, which might generate common method bias (Podsakoff et al., 2012). To maintain good validity, multiple and diverse approaches (e.g., daily diaries, observations, clinician ratings of depressive and anxiety symptoms) could be usefully applied in the future. Fourth, it could be that looking at a total CS or RUS score obscures the role of the unique components they play. Future studies could examine the moderating effects of components of self-compassion in the relationship between perceived discrimination and psychological distress. Fifth, the present study drew on two waves of data to analyze the longitudinal relationships among the key variables, which may be considered an inadequate number of assessment time points. Future studies could examine the trends of these relationships by analyzing data at three or more time points.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s12671-021-01810-6.

Author Contribution QL: designed and executed the study, collected the data, and wrote the manuscript. JW: designed and executed the study, collected the data, and wrote the manuscript. QW: developed conceptual framework; conducted the data analyses; and wrote, edited, and critically reviewed the manuscript. QL and JW contributed equally to this work. All authors approved the final version of the manuscript for submission.

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Data Availability All data are available and can be obtained by emailing qinglu-wu@hotmail.com.



Declarations

Ethics Approval Ethical approval was obtained from the research ethics committee of the Guangzhou City University of Technology. The questionnaire and methodology for this study was approved by the research ethics committee at the Guangzhou College of South China, University of Technology before data collection.

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

Conflict of Interest The authors declare no competing interests.

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