# SELF-COMPASSION AND HEALTH-RELATED OUTCOMES: THE MEDIATING ROLE OF PERCEIVED STRESS

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## Abstract

A growing body of research has suggested that self-compassion is associated with better mental health. Recently, it has been demonstrated to also be associated with health-related outcomes. The aim of the current study was to test the mediating role of perceived stress in the relationship between self-compassion and physical health. A total of 489 participants (49%; male, 51% female; M age=40.48, SD=11.95) completed an online composite questionnaire that included: Demographic information, self-compassion, perceived stress, physical symptoms, and self-rated health scales. The results showed that perceived stress fully mediated the relationship between self-compassion and physical symptoms. Furthermore, perceived stress partially mediated the relationship between self-compassion and self-rated health. The results further elaborate previous findings with regard to the predictive role of self-compassion on health-related outcomes via perceived stress. Given the predictive role of physical symptoms and self-rated health on future health outcomes and mortality, the current findings have important implications for establishing intervention as well as prevention programs.

Keywords: Self-compassion, perceived stress, self-rated health, physical symptoms.

## **1. Introduction**

A growing body of research has suggested that self-compassion is associated with various indicators of positive psychological functioning and mental health (MacBeth & Gumley, 2012; Zessin et al., 2015) and, more recently, that self-compassion may predict physical health outcomes (Phillips & Hine, 2021). In contrast to the accumulating evidence regarding the key mediators in mental health psychosocial well-being, evidence regarding the potential mediators in physical health is limited. The current study looks to investigate the mediating role of percieved stress in the relationship between self-compassion and health-related outcomes.

Subjective measures of health-related oucomes have focused on two aspects of physical health: self-rated health (SRH) and physical symptoms. Studies examining SRH is an overall perception of ones' own health status (Jylhä, 2009). It is an active cognitive appraisal which combines subjective and objective aspects of health into the conceptual framework of the individual (Tissue, 1972).

Another aspect of physical health is physical symptoms. Physical symptoms refer to bodily sensations and the perception of physical distress in a specific area of the body (Jylhä, 2009). Both SRH and physical symptoms were associated with objective physical health status (Jylhä, 2009).

Self-compassion is defined as a positive self-attitude and refers to being open and tolerant toward oneself when experiencing suffering or pain. Neff (2023) placed self-compassion on a bipolar continuum ranging from compassionate self-responding to uncompassionate self-responding or self-coldness. She proposed three interacting elements of self-compassion: self-kindness (vs. self-judgment; SK-SJ), a sense of common humanity (vs. isolation; CH-I), and mindfulness (vs. overidentification with one's suffering; (M-OI). The positive association between self-compassion and psychosocial well-being has been well documented (Neff, 2023).

A growing body of research has indicated that self-compassion can have a positive influence on health-related outcomes. For example, self-compassion has been associated with good sleep quality (e.g., Rakhimov et al., 2023), with fewer physical symptoms (e.g., Dunne et al., 2018), with health-promoting behaviors (e.g., Li et al., 2020), and with medical adherence (e.g., Sirois & Hirsch, 2019). In general, research examining the association between self-compassion and physical health has focused on two facets of physical health: physical symptoms and SRH (Neff, 2023).

Recent studies have aimed to detect the mechanisms behind the association between self-compassion and physical health outcomes (e.g., Finlay-Jones et al., 2015; Sirois et al., 2019). Cha and colleagues' (2022) meta-analysis assessed different types of mediators and found consistent indirect effects of negative affect and perceived stress on the link between self-compassion and physical health. This association has been demonstrated in studies based on self-report measures (e.g., Finlay-Jones et al., 2015; Sirois, 2014, 2015b) and in intervention studies designed to increase self-compassion in order to decrease stress (e.g., Neff & Germer, 2013).

It has been well documented that stress is profoundly associated with health outcomes in both the short-term and long-term. Stress impacts multiple biological systems which interact with each other to generate an adaptive response to environmental challenges. These biological systems include the hypothalamus-pituitary-adrenal (HPA) axis regulation and cortisol dynamics, the autonomic nervous system (ANS), gene expression, and immunity (O'Connor et al., 2021). These biological processes are suggested as precursors to the development of various chronic diseases (McEwen, 2007).

The relationship between self-compassion, perceived stress, and physical health outcomes has been examined in several studies (e.g., Hu et al., 2018; Rakhimov et al., 2023). For example, Hall and colleagues (2013) found that the three subscales of self-compassion (SK-SJ, CH-I, M-OI) were associated with perceived stress while physical health (as measured by self-report symptoms) was associated with two out of the three subscales (SK-SJ, M-OI). Homan and Sirois (2017) found perceived stress to serve as a mediator of the relationship between self-compassion and physical health (as measured by self-reported physical symptoms, physical functioning, and general health). Higher levels of self-compassion contributed to lower levels of perceived stress which lead to better physical health. The current study examined the mediating role of percieved stress in the relationship between self-compassion and the two distinctive aspects of physical health.

The current study explored the predictive role of psychological antescendent on health-related outcomes, using the two distinct constructs of SRH and physical symptoms. Given the important predictive role of SRH and physical symptoms on actual physical health, there is a need to deepen our understanding of the antecedents predicting health-related outcomes. Our main hypotheses are as follows:

H1: Self-compassion will have a significant indirect effect on SRH through reduced perceived stress;

**H2**: Self-compassion will have a significant indirect effect on physical symptoms through reduced perceived stress.

## 2. Design

#### 2.1. Participants

Participants included 489 Israeli adults recruited online: 49%; male, 51% female; M age=40.48, SD=11.95). To be included, participants had to be 20–60 years old and speak the language in which the survey was administered (Hebrew or Arabic). No exclusion criteria were applied.

#### 2.2. Procedure

The authors collected the data via a cross-sectional survey. Qualtrics (https://www.qualtrics.com) was used to create an anonymous questionnaire which was distributed online by iPanel (https://www.ipanel.co.il), a large Israeli panel service. The complete study protocol was approved by the College Institutional Review Board. Questionnaire completion was voluntary, and respondents were told they could stop their participation at any point.

#### 2.3. Measures

**2.3.1. Demographics.** The demographic questionnaire included items on culture (Jew or Arab), parenthood, gender, age, residence, religion, and education.

**2.3.2. Self-compassion.** Self-compassion was assessed using the Self-Compassion Scale–Short Form (SCS–SF) (Raes et al., 2011). This 12-item questionnaire is comprised of six two-item subscales: self-kindness (e.g., "I try to be understanding and patient towards those aspects of my personality I don't like"), common humanity (e.g., "I try to see my failings as part of the human condition"), mindfulness (e.g. "When something painful happens I try to take a balanced view of the situation"), self-judgment (e.g., "I'm intolerant and impatient towards those aspects of my personality I don't like"), isolation (e.g., "When I'm feeling down, I tend to feel like most other people are probably happier than I am") and overidentification (e.g., "When I'm feeling down, I tend to obsess and fixate on everything"). Responses are ranked along a 5-point scale ranging from 1 (almost never) to 5 (almost always). To compute a

composite score, the negative items were reversed scored and the sum across all items was computed. Higher scores indicate greater self-compassion. Internal reliability (Cronbach's alpha) in the current study was 0.78. For the current study, the scale was translated, in two parallel processes, from English to Hebrew and back and from Hebrew to Arabic and back, by two professionals fluent in all three languages (Cha et al., 2007).

**2.3.3. Perceived stress.** Perceived stress was measured by the Perceived Stress Scale (PSS) (Cohen et al., 1983). This 14-item questionnaire measures the level to which situations that have occurred in the past month are appraised as stressful. Responses are ranked along a 5-point scale ranging from 1 (never) to 5 (very often). To compute a composite score, the negative items were reversed scored and the mean was computed. Higher scores indicate greater perceived stress. The PSS has demonstrated satisfactory reliability and validity (Cohen & Williamson, 1988). Internal reliability (Cronbach's alpha) in the current study was 0.85.

**2.3.4. Physical symptoms.** We used the Cohen-Hoberman Inventory of Physical Symptoms (CHIPS) (Cohen & Hoberman, 1983) to assess physical symptoms. A list of 33 commonly experienced physical symptoms were rated on their presence over the previous two weeks on a 5- point scale ranging from 0 (not at all bothered) to 4 (extremely bothered). The final score was calculated as the average of the 32 item ratings. The CHIPS has demonstrated satisfying reliability and validity (Cohen & Hoberman, 1983). Internal reliability (Cronbach's alpha) in the current study was 0.95.

**2.3.5. Self-rated health.** SRH was measured by a single item question evaluating one's health status on 5-point scale ranging from 1 (poor) to 5 (excellent). Lower scores therefore represent poor SRH.

## 3. Results

In Hypothesis 1 we expected that perceived stress would mediate the relationship between self-compassion and SRH. To examine this hypothesis, we followed the four-step procedure to set up mediation effect (Baron & Kenny, 1986). Regression analysis revealed that in the first step self-compassion positively predicted SRH (see Model 1 of Table 1). In the second step, self-compassion negatively predicted perceived stress (see Model 2 of Table 1). In the third step, after controlled for self-compassion, perceived stress negatively predicted SRH (see Model 3 of Table 1). At last, after controlled for perceived stress, self-compassion positively predicted SRH. On the whole, partial mediation effect was found, thus supporting hypothesis 1.

Predictors	Model 1		Model 2		Model 3	
	β	t	β	t	β	t
Self-	4.28	9.73***	73	-19.04***	1.91	3.42**
compassion						
Perceived					-3.25	-6.48***
stress						
<b>R</b> <sup>2</sup>	.17		.43		.23	
F	48.01***		185.44***		48.70***	
** <i>p</i> < .01, ***	p < .001					

Table 1. Testing the mediation effects of self-compassion on SRH.

Table 2. Testing the mediation effects of self-compassion on physical symptoms.

Predictors	Model 1		Model 2		Model 3	
	β	t	β	t	β	t
Self-	69	-8.70***	73	-19.04***	18	-1.85
compassion						
Perceived					.70	7.85***
stress						
<b>R</b> <sup>2</sup>	.14		.43		.23	
F	38.15***		185.44***		49.13***	
*** <i>p</i> < .001						

In Hypothesis 2 we expected that perceived stress would mediate the relationship between self-compassion and physical symptoms. To examine this hypothesis, we followed the four-step procedure to set up mediation effect (Baron & Kenny, 1986). Regression analysis revealed that in the first step self-compassion negatively predicted physical symptoms (see Model 1 of Table 1). In the second step, self-compassion negatively predicted perceived stress (see Model 2 of Table 1). In the third step, after controlled for self-compassion, perceived stress positively predicted physical symptoms (see Model 3 of Table 1). At last, after controlled for perceived stress, self-compassion negatively predicted physical symptoms. On the whole, a full mediation effect was found, thus supporting hypothesis 2.

#### 4. Discussion

The current study aimed to examine the mediating role of percieved stress in the relationship between self-compassion and health-related outcomes. The findings supported our hypotheses showing that the pathways from self-compassion to health-related outcomes through perceived stress were significant. These findings suggest the central role of perceived stress in mediating the association between self-compassion and health outcomes. The realthionship between self-compassion and stress has been well documented in both studies using self-reported stress and studies using objective measures (Arch et al., 2014; Breines et al., 2014; Luo et al., 2018). The relationship between stress and physical health has also been well documented (for a review, see O'Connor et al., 2021).

Our findings provide new insight into the relationship between self-compassion and health outcomes. The current study addressed two different aspects of physical health as two distinct variables: 1. physical symptoms, as measured by an elaborated assessment of physical conditions and sensations; and 2. SRH, as measured by an general overall appraisal of one's health. This differentiated approach to the study of physical health outcomes enabled us to deepen our understanding of the precursors affecting subjective health outcomes, which is a valuable predictor of objective health outcomes and mortality (Jylhä, 2009).

Despite its contributions, the current study has some limitations. First, the study variables were measured using self-report methods and may thus be susceptible to reporting bias. Although we used standardized validated tools to minimize biases, future studies should incorporate objective measures of stress and health-related outcomes. Second, the current study is a cross-sectional, correlational study and therefore does not imply causality. Future studies should shed light on the nature of the relationship between self-compassion and health-related outcomes through perceived stress at several time points. Moreover, experimental studies may be helpful for uncovering the exact health conditions which would be benefited by self-compassion interventions.

To conclude, the current study highlights the role of self-compassion in predicting physical health through perceived stress. Jylhä (2009) indicated that SRH serves as a crossroads where the psychological and biological aspects of the individual's experience converge and stressed the need for more comprehensive approaches. We emphasized here the psychological components of this crossroad, elaborating on the antecedents contributing to SRH. Future studies should explore additional psychological as well as biological aspects in order to generate a conceptual framework which can enrich our understanding of both health and illness trajectories.

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