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# “Silence! The body is speaking” – a correlational study of personality, perfectionism, and self-compassion as risk and protective factors for psychosomatic symptoms distress

Maor Yeshua<sup>a</sup>, Ada H. Zohar<sup>a,b</sup> and Lee Berkovich<sup>a</sup>

<sup>a</sup>Department of Behavioral Sciences, Ruppin Academic Center, Emek Hefer, Israel; <sup>b</sup>Clinical Psychology Graduate Program, Ruppin Academic Center, Emek Hefer, Israel

## ABSTRACT

The current study examined the role of personality traits on psychosomatic distress (PD) and tested the hypothesis that the association between perfectionism and PD would be moderated by self-compassion. One hundred and seventy-three community volunteers, of whom 24.9% were men, mean age  $31.52 \pm 13.29$ , reported online on the DS14, a measure of Type D personality, on the TCI-140, a measure of temperament and character, on the Frost multidimensional perfectionism scale, on the short form of the self-compassion scale and on the SOMS-7 for psychosomatic symptoms. We defined psychosomatic distress as the product of the symptom count and severity rating score of the SOMS-7. The hierarchical linear regression model that included all the personality variables as well as the interaction term between self-compassion and perfectionism accounted for 25% of the variance in PD. The interaction between perfectionism and self-compassion entered into the model in the last block was highly protective. High self-compassion moderated the effect of perfectionism on PD. Our finding correspond with the notion that personality can enhance PD but can also mitigate it. Protective personality traits, such as self-compassion, might be good targets for psychological intervention.

## ARTICLE HISTORY

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## KEYWORDS

TCI; Type D personality; self-compassion; perfectionism; psychosomatic symptoms

## Introduction

Individuals with psychosomatic symptoms have several sources of distress: the number and severity of psychosomatic symptoms they experience, the fact that in the absence of a known cause there is at best symptomatic relief for their suffering, and no comprehensive cure, as well as the explicit or implicit accusation that their suffering is ‘all in their head’, or in some sense their own fault. They may not be believed by medical professionals increasing their sense of loneliness, guilt, anger, anxiety and depression (Chu, Saucier, & Hafner, 2010; Aro, Hänninen, & Paronen, 1989; Rief & Hiller, 2003). Characterizing the emotional distress of psychosomatic symptoms is important for providing effective treatment (Luo, Goddeeris, Gardiner, & Smith, 2007). One way to

relieve emotional distress brought about by anxiety and perfectionism is by the ability to feel compassion for oneself (Neff, 2003).

Self-compassion is the belief that one must be compassionate toward oneself, as one is toward others (Neff, 2003). This term was first defined as 'being open to and moved by one's own suffering, experiencing feelings of caring and kindness toward oneself, taking an understanding, nonjudgmental attitude toward one's inadequacies and failures, and recognizing that one's own experience is part of the common human experience' (Neff, 2003, p. 224).

Neff (2003) suggested that self-compassion has three components as well as their polar opposites: self-kindness versus self-judgment, common-humanity versus self-isolation, and mindfulness versus over-identification. Self-kindness means that one is warm and understanding toward oneself, rather than being critical. Common-humanity is the ability to recognize that suffering, failure, and disability are normal, and that they are part of the human condition. However, not every individual can relinquish the criticism that is brought about by self-directed perfectionism (Frost, Marten, Lahart, & Rosenblate, 1990).

Studies that examined the relationship between perfectionism and psychosomatic symptoms have found that perfectionism is a risk factor for experiencing psychosomatic symptoms (Flett, Molnar, Nepon, & Hewitt, 2012; Sumi & Kanda, 2002). Sumi and Kanda (2002) showed that it was the failure to meet high standards which increased the likelihood of having psychosomatic symptoms.

Self-compassion was found to be associated with psychological health and the processing of self-related emotions (Neff, Kirkpatrick, & Rude, 2007; Van Dam, Sheppard, Forsyth, & Earleywine, 2011). Self-compassion is helpful in processing stress, and promotes emotion regulation (Neely, Schallert, Mohammed, Roberts, & Chen, 2009). Mindfulness – a part of an expanded definition of self-compassion – is a resilience factor for psychosomatic disorders (Majumdar, Grossman, Dietz-Waschkowski, Kersig, & Walach, 2002). Psychosomatic symptoms are exacerbated by anxiety (Wong & Fong, 2015), while self-compassion down-regulates anxiety (Sydenham, Beardwood, & Rimes, 2017; Van Dam et al., 2011). Thus we hypothesize that self-compassion will be protective against psychosomatic symptoms.

Temperament and character are associated with psychological health; Cloninger, Svrakic, and Przybeck (1993) developed the psycho-socio-biological model of Temperament and Character (TCI) for the measurement of personality. This model distinguishes between two levels of personality: temperament and character. Temperament can be seen in early development, and it includes the characteristics that remain stable over time and form the basis of one's mood (Cloninger et al., 1993; Goldsmith et al., 1987). On the other hand, character traits develop at a later stage of life in transaction with the environment. These relate to the individual's attitude toward the self, humanity, and the universe (Cloninger et al., 1993).

The model includes four temperament dimensions: novelty seeking (NS), harm avoidance (HA) reward dependence (RD) and persistence (PS) (Cloninger et al., 1993) as well as three character traits: self-directedness (SD), cooperativeness (CO) and self-transcendence (ST) (Cloninger & Svrakic, 1992; Cloninger et al., 1993).

A person who is high in HA will be behaviorally inhibited and will tend to avoid situations that are perceived as threatening. In addition, HA includes anticipatory anxiety and pessimism, fear of uncertainty, shyness and fatigability. PS is a person's ability to

pursue a behavior despite fatigue, frustration, and the lack of regular rewards. PS also includes diligence, ability to withstand frustration, ambition and perfectionism. SD is the extent to which a person takes responsibility, is purposeful, shows initiative and can improvise, is self-accepting and has good habits which support his purposeful goal directed behavior (Cloninger, 1986, 1987; Cloninger & Svrakic, 1992, 1997; Cloninger et al., 1993).

There is a systematic relationship between temperament and character as measured by the TCI and Type D (Denollet, 2005) personality (Ablin, Zohar, Zaraya-Blum, & Buskila, 2016; Zohar, Denollet, Lev Ari, & Cloninger, 2011) which is a relatively simple system of personality classification.

Type D, or distressed personality, is characterized by high negative affectivity (NA) and high social inhibition (SI). Type D personality leads individuals to feel anxious in social situations and to experience others as a potential source of criticism and rejection, hence increasing negative emotions (Denollet, 2005). The prevalence in the population is 24.1% (Zohar et al., 2011) and it is fairly stable over time (Zohar, 2016). When compared to Non-D individuals, those with Type D personality are lower in SD and PS and higher in HA (Zohar et al., 2011). The prevalence of Type D in individuals with psychosomatic disorders is higher than that in the general population (Ablin et al., 2016) and is also elevated among individuals with anxiety and affective disorders (Zohar et al., 2018).

A study that examined the relationship between Type D personality and psychosomatic symptoms in early adulthood found that the combination of SI and NA increased the risk of psychosomatic complaints (Jellesma, 2008). A study of Swedish adolescents, found that adolescents with Type D personality were more likely to complain of a range of psychosomatic symptoms (Condén, Leppert, Ekselius, & Aslund, (2013).

It is in this context that studying the personality traits associated with psychosomatic distress is important; not so as to delegitimize the psychosomatic suffering, but so as to look for paths to resilience and to suggest possible targets for intervention (Wilson & Mintz, 1989). The current study was designed to assess the risk and protection that the TCI traits, Type D personality, perfectionism and self-compassion confer on psychosomatic distress, reasoning that while Type D, HA, and perfectionism would confer risk, high SD, PS, and self-compassion might confer protection.

## Method

### *Participants*

The study was conducted online on a Qualtrics platform (Qualtrics, 2017). One hundred and seventy-three adult community volunteers aged 18–72 completed the questionnaire, 81.22% of those who were sent the link and completed this online report; 40 (18.78%) started self-reporting but did not complete the questionnaire. The sample mean age was  $31.52 \pm 13.29$ , when 24.9% of them were men ( $N = 43$ ; Mean age  $33.74 \pm 14.16$ ) and 75.1% women ( $N = 130$ ; Mean age  $30.78 \pm 12.97$ ). Among the participants who finished the questionnaire, Seventy-two (41.62%) were B.A. students in behavioral science. The rest of the sample (58.38%) were from the general population approached using a snowball technique (via open invitation to participate that was published in Facebook and WhatsApp).

## ***Procedure and statistical analysis***

Data collection was done using the Qualtrics software. Power calculations for linear regression and correlation analysis informed the sample size considerations (Hanley, 2016). Data analyses included correlational and regression analyses. All statistical analyses were performed on standardized variables. Statistical analysis was conducted using SPSS 21.

## ***Measures***

### ***Psychosomatic symptoms***

Psychosomatic symptoms were measured using the Hebrew version of the Screening for Somatoform Symptoms questionnaire (SOMS-7; Rief & Hiller, 2003), which was translated and independently back-translated for the present study. The SOMS-7 consists of 53 items (e.g. 'abdominal pain') that are responded to on a 5-point frequency Likert scale ranging from 0 to 4. The internal consistency of the scale was  $\alpha = .93$ . We defined psychosomatic distress as the symptom count multiplied by the symptom severity.

### ***Personality traits***

In this study we chose to focus on three traits that have been shown to predict physical and mental health (Cloninger & Zohar, 2011): PS, SD and HA. The measurement of the Temperament and Character Inventory Revised (TCI-R) translated into Hebrew, was found to be reliable and with structural validity, discriminating validity and convergent validity (Zohar & Cloninger, 2011). The responses are on a 5-point Likert scale ranging from 1 to 5. In the present study it included two temperament dimensions: HA (e.g. 'I usually have confidence that everything will be fine, even in situations that concern most people'-reversed) and PS (e.g. 'I prefer a challenge over easy work') and one character dimension: SD (e.g. 'I often feel that I am the victim of circumstances'-reversed). In the current study, scale reliability was  $\alpha = .89$  for HA,  $\alpha = .87$  for PS, and  $\alpha = .90$  for SD.

The measurement of Type D personality (Denollet, 2005) is carried out on a 5-point Likert scale ranging from 0 to 4 and it was translated into Hebrew and validated by Zohar et al. (2011). The questionnaire contains 14 items that measure two 7-item sub-scales: NA (e.g. 'I often make a fuss about unimportant things') and SI (e.g. 'I find it hard to start a conversation'). The subscales showed excellent internal reliability, for NA  $\alpha = .86$  and for SI  $\alpha = .89$ . In the current study we used the product of the subscale scores, i.e. NA X SI as a continuous variable for the Type D tendency (Ferguson et al., 2009; Zohar, 2016).

### ***Perfectionism***

Perfectionism was measured using the reliable and validated Hebrew adaptation of Frost Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990; Madjar, Voltsis, & Weinstock, 2015). The FMPS consists of 35 items and six sub-scales that responded to on a 5-point Likert scale ranging from 1 to 5.

The sub-scales are: Concern over Mistakes (CM; e.g. 'If I'll fail at work, I will be a failure as a person'), Doubts about actions (D; e.g. 'Even when I do something very carefully, I often feel it is not entirely right'), Parents Expectations (PE; e.g. 'My parents set very high standards for me'), Parental Criticism (PC; e.g. 'When I was a child I was

punished for doing things that are less than perfect’), Personal Standards (PST; e.g. ‘If I don’t set the highest standards for myself, I may end up being ranked second), and Organization (O; e.g. ‘Organization is very important for me’). In the current study the FMPS had internal reliability of Cronbach’s  $\alpha = .89$ .

### Self-compassion

Self-Compassion was measured using the reliable and validated Hebrew version of the Self-Compassion Scale – Short Form (SCS-SF; Reas, Pommier, Neff, & Van Gucht, 2011; Zeller, Yuval, Nitzan-Assayag, & Bernsrein, 2015). The SCS-SF consists of 12 items and six sub-scales that are responded to on a 5-point Likert scale ranging from 1 to 5. The sub-scales are: Self-Kindness (SK; e.g. ‘When I’m going through a very hard time, I give myself the caring and tenderness I need’), Self-Judgment (SJ; e.g. ‘I’m intolerant and impatient towards those aspects of my personality I don’t like’), Common Humanity (CH; e.g. ‘I try to see my failings as part of the human condition’), Isolation (I; e.g. ‘When I fail at something that’s important to me, I tend to feel alone in my failure’), Mindfulness (M; e.g. ‘When something painful happens I try to take a balanced view of the situation’) and Over-Identification (OI; e.g. ‘When I fail at something important to me I become consumed by feelings of inadequacy’). The internal reliability of the SCS-SF in the current study was  $\alpha = .84$ .

## Results

The descriptive statistics for the study variables are presented in Table 1. The relationship between the variables were in the expected direction and most of the correlations were significant and are presented in the correlation matrix (Table 2). In light of the correlational results, a hierarchical linear regression analysis was conducted with the addition of an interaction term between self-compassion and perfectionism.

**Table 1.** Psychometric properties of key variables.

Variables	<i>n</i>	<i>M</i>	<i>SD</i>	$\alpha$	Range		Skew
					Potential	Actual	
TCI-R							
HA	173	2.78	.63	.89	1–5	1.15–4.65	.49
PS	173	3.40	.53	.87	1–5	1.60–4.80	–.22
SD	173	3.64	.62	.90	1–5	1.95–4.95	–.45
DS-14							
NA	173	9.94	6.93	.86	0–28	0–27	.61
SI	173	9.36	6.69	.89	0–28	0–28	.70
FMPS	173	2.80	.48	.89	1–5	1.63–4.03	.14
SCS-SF	173	3.19	.69	.84	1–5	1.25–4.67	–.29
SOMS-7				.93			
NPS	173	13.77	9.29		0–52	0–42	.90
SPS	173	24.97	20.40		0–208	0–122	1.53

For all scales, higher scores are indicative of more extreme responding in the direction of the construct assessed.  $\alpha$  = Cronbach’s alpha in the present study; TCI-R = temperament and character inventory revised; HA = harm-avoidance; PS = persistence; SD = self-directedness; DS-14 = type D scale 14; NA = negative affectivity; SI = social inhibition; FMPS = frost multidimensional perfectionism scale; SCS-SF = self-compassion scale – short form; SOMS-7 = screening for somatoform symptoms – 7th edition; NPS = number of psychosomatic symptoms; SPS = severity of psychosomatic symptoms.

**Table 2.** Standardized Pearson's correlation matrix for study variables.

	HA	PS	SD	NA X SI	FMPS	SCS-SF	SPS	NPS	Psychosomatic Distress
HA	–								
PS	–.47**	–							
SD	–.61**	.40**	–						
NA X SI	.71**	–.35**	–.53**	–					
FMPS	.36**	.18**	–.46**	.39**	–				
SCS-SF	–.65**	.31**	.67**	–.52**	–.45**	–			
SPS	.47**	–.13*	–.46**	.42**	.39**	–.45**	–		
NPS	.39**	–.11	–.42**	.36**	.37**	–.38**	.94**	–	
Psychosomatic Distress	.27**	–.05	–.26**	.27**	.26**	–.19**	.68**	.56**	–

$N = 173$ . For all scales, higher scores are indicative of more extreme responding in the direction of the construct assessed. HA = harm-avoidance; PS = persistence; SD = self-directedness; NA X SI = the product of the social inhibition and the negative affectivity scores of the DS14; FMPS = frost multidimensional perfectionism scale; SCS-SF = self-compassion scale – short form; SPS = severity of psychosomatic symptoms; NPS = number of psychosomatic symptoms; Psychosomatic Distress = the product of the standardized severity and the number of the psychosomatic symptoms. \* $p < .05$  \*\* $p < .01$  one-tailed.

**Table 3.** Summary of standardized hierarchical linear regression analysis predicting the psychosomatic symptoms distress.

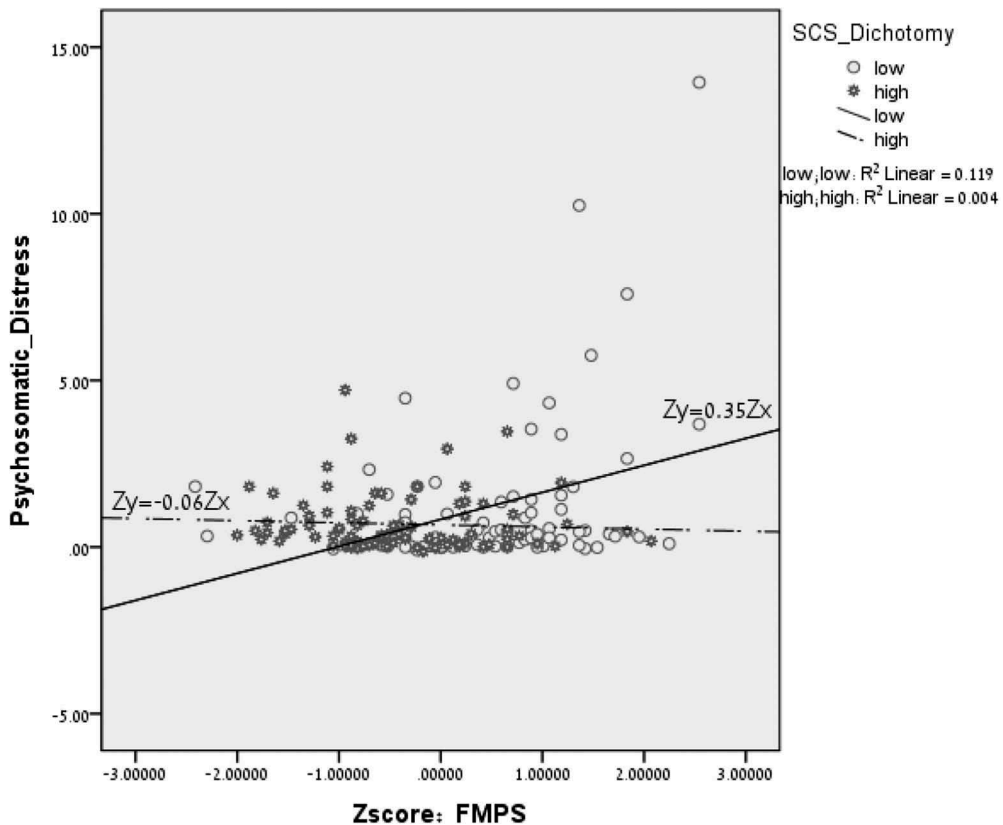
Variables	psychosomatic symptom distress									
	Model 1		Model 2		Model 3		Model 4		Model 5	
	$\beta$	95% CI	$\beta$	95% CI	$\beta$	95% CI	$\beta$	95% CI	$\beta$	95% CI
Sex	–.02	[–.17, .13]	–.02	[–.17, .13]	–.01	[–.16, .14]	.00	[–.15, .15]	.01	[–.16, .14]
Age	–.03	[–.18, .12]	.06	[–.09, .21]	.06	[–.09, .21]	.06	[–.09, .21]	.06	[–.09, .21]
HA			.18	[.03, .31]	.15	[.00, .30]	.18	[.03, .31]	.16	[.01, .31]
PS			.12	[–.03, .27]	.05	[–.10, .20]	.01	[–.14, .16]	.02	[–.17, .13]
SD			–.15	[–.30, .00]	–.10	[–.25, .05]	–.13	[–.28, .02]	–.12	[–.27, .03]
NA X SI			.11	[–.04, .26]	.09	[–.06, .24]	.09	[–.06, .24]	.08	[–.07, .23]
Perfectionism					.12	[–.03, .27]	.14	[–.01, .29]	.12	[–.03, .27]
Self-compassion							.09	[–.06, .24]	.09	[–.06, .24]
PS X SC									–.36**	[–.51, –.21]
$R^2$	.00		.11		.12		.12		.25	
$F$	.09		3.38**		3.13**		2.81**		5.87**	
$\Delta R^2$			.11		.01		.00		.13	
$\Delta F$			5.02**		1.53		.64		26.75**	

$N = 173$ . TCI (Cloninger et al., 1993) traits: HA = harm-avoidance; PS = persistence; SD = self-directedness; NA X SI = the product of the social inhibition and the negative affectivity scores of the DS14; PS X SC = the interaction between perfectionism and self-compassion. \* $p < .05$ . \*\* $p < .01$ .

5-step hierarchical regression was performed with psychosomatic distress as the dependent variable: 1) sex and age; 2) sex, age, HA, PS, SD and type D; 3) sex, age, HA, PS, SD, type D and perfectionism; 4) sex, age, HA, PS, SD, type D, perfectionism and self-compassion; 5) sex, age, HA, PS, SD, type D, perfectionism, self-compassion and the interaction between perfectionism and self-compassion. The results are presented in Table 3.

Table 3 shows that the most comprehensive and predictive model is the fifth model with the eight independent variables and the interaction term ( $R^2 = .25$ ,  $\Delta R^2 = .13$ ,  $F(9,162) = 5.87$ ,  $p < .001$ ). While none of the other predictor variables were independently significant, the interaction between perfectionism and self-compassion was found to be negative and statistically significant ( $\beta = -.36$ ,  $t(162) = -5.17$ ,  $p < .001$ ).

Figure 1 shows the moderating role of self-compassion on psychosomatic distress. Dichotomizing the sample into high (above the mean) and low (below the mean) SC,



**Figure 1.** The interaction element between self-compassion and perfectionism predicting psychosomatic distress.

$N = 173$ . PsychoSomatic\_Distress = the product of the standardized severity and number of the psychosomatic symptoms; FMPS = frost multidimensional perfectionism scale; SCS\_Dichotomy = self-compassion as dichotomized variable by the mean.

we regressed psychosomatic distress on perfectionism. The two graphs are visibly distinct; the psychosomatic distress of the high SC group is not affected by perfectionism. On the other hand, the low SC group is much affected by perfectionism, the more perfectionist they are the more psychosomatic distress they experience. This explains the negative correlation between the interaction element and psychosomatic distress found in the hierarchical linear regression (see Table 3); The higher the person is in self-compassion and perfectionism, the less he or she experience psychosomatic distress.

## Discussion

The current study examined psychosomatic distress as a function of personality traits, perfectionism, and self-compassion as independent variables. Personality traits were found to meaningfully and significantly predict psychosomatic distress, and self-compassion played an important role of down-moderating the effect of high perfectionism on psychosomatic distress.



Individuals who were classified as having Type D or 'distressed' personality experienced more psychosomatic distress than those who were Non-D. This finding is consistent with previous studies in adolescents (see Condén et al., 2013; Jellesma, 2008) and in adults (Mols & Denollet, 2010). The results of this study which show elevated psychosomatic distress in Type D individuals is consistent with the psychophysiological theory.

The current study showed a positive relationship between perfectionism and psychosomatic distress. This is consistent with past research (Flett et al., 2012; Sumi & Kanda, 2002).

Several studies of syndromes characterized by pain were found to associate with personality traits or profiles of the Temperament and Character model of personality (TCI; Ablin et al., 2016; Fukuda et al., 2010; Santos et al., 2011; Van Campen et al., 2009). We found that the temperament trait of Harm Avoidance (HA) was associated with the number of psychosomatic symptoms. A person who is high on HA will show anticipatory anxiety, pessimism, fear of uncertainty, shyness and fatigability (Cloninger & Svrakic, 1997; Cloninger et al., 1993). Individuals high in HA also exhibit sustained HPA activation (Rademaker, Kleber, Geuze, & Vermetten, 2009). Furthermore, Individuals classified as Type D are higher in HA than others, and therefore experience more stress and more psychosomatic symptoms (Zohar et al., 2011). These findings are consistent with the association of Neuroticism as measured in the Big Five Personality Model (Costa & McCrae, 1992) with unexplained medical symptoms (Deary, Chalder, & Sharpe, 2007).

The character trait of Self-Directedness (SD) is the extent to which a person believes in himself and his abilities and sees himself as an independent entity (Cloninger & Svrakic, 1997; Cloninger et al., 1993). In the current study SD was negatively associated with psychosomatic distress. Being high in SD confers resilience for physical and mental well-being (Cloninger & Zohar, 2011). High SD combined with low HA confers additional resilience and is related to optimal HPA activation (Rademaker et al., 2009). In the current study SD was highly correlated with self-compassion showing adaptive processing of self-related emotions and psychological health (Neff et al., 2007; Van Dam et al., 2011).

We found that self-compassion is related to less psychosomatic distress. This is consistent with previous research. A large-scale study of somatoform disorder found a considerable difference in the self-compassion of patients vs. controls (Dewsaran-van der Ven et al., 2018).

An integrated model emerged from the hierarchical regression analyses. While all the correlations between the variables were found to be statistically significant, the hierarchical regression controlled the covariance and presented the partial correlations. As hypothesized Perfectionism and HA increase psychosomatic distress, and SD reduces it. However, while perfectionism is associated with psychosomatic distress, being high in self-compassion down moderates the effect of perfectionism; in fact, the most powerful single predictor of psychosomatic distress was the interaction of self-compassion and perfectionism. While being low on self-compassion is a risk factor for increased psychosomatic distress, high self-compassion is highly protective, mitigating the self-criticism and self-punishing aspects of perfectionism on physical well-being.

The limitations of the current study included the use of a volunteer sample, which was not enriched for patients with acute psychosomatic distress. Like all volunteer samples, men were underrepresented. In addition, the demographical description of the

sample is lacking. The correlational design of the study limits the possibility of studying temporal relations between variables. The current study did not measure anxiety and depression which have been shown to be associated with psychosomatic distress (e.g. Mikocka-Walus, Pittet, Rossel, & von Känel, 2016) as well as with personality traits (Ablin et al., 2016). It is possible that anxiety and depression might mediate the association between personality traits and psychosomatic distress. However, the stable nature of the personality traits measured (Zohar, 2016; Zohar, Sandbank, & Gelfin, 2015) vs the fluctuation of anxiety and depression symptoms (Nivard et al., 2015) makes personality traits psychological variables of particular interest.

Despite the limitations of the study, the present study has a new and important finding. While psychosomatic distress is exacerbated as the level of perfectionism increases for people with low self-compassion, for people with high self-compassion, there is a moderation and a decline in the correlation between perfectionism and psychosomatic distress.

It would be of theoretical and clinical interest, to test interventions that target self-compassion, and to observe under experimental conditions, if improvement in self-compassion indeed brings about a reduction in psychosomatic distress, especially for individuals who are highly perfectionistic.

## Ethical approval

The study was approved by the IRB and conducted anonymously.

## Informed consent

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

## Disclosure statement

No potential conflict of interest was reported by the authors.

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## ORCID

Maor Yeshua  <http://orcid.org/0000-0002-3463-5624>

Ada H. Zohar  <http://orcid.org/0000-0003-2171-9885>

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