Secondary traumatic stress, distress and well-being among crisis line workers: Does self- compassion act as a buffer?

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Abstract

Crisis line services are a valuable contribution to our healthcare system, yet its workers also must deal with intense stressors. To find out factors influencing workers mental health, this study examined the level of secondary traumatic stress, distress and well-being in crisis line workers and explored the role of self-compassion in this regard. Additionally, the different facets of self-compassion were examined. A cross-sectional design with an online survey available between November and December 2019 was used. Participants were recruited from three Dutch crisis lines. N=593 workers participated in the study. The levels of secondary traumatic stress, self-compassion, distress and well-being were tested using a compilation of questionnaires. Moderation analyses were done using PROCESS in SPSS with secondary traumatic stress as independent variable, self-compassion as moderating variable and distress and well-being, respectively, as dependent variables. Results showed that most workers did not have high levels of decreased mental health but high levels of self-compassion. Moreover, the total self-compassion factor was a moderator in the relationship between secondary traumatic stress and distress: individuals with high levels of self-compassion experienced less distress in response to secondary traumatic stress compared to individuals with lower levels (interaction effect: β=-.29). However, analysing the positive and negative self-compassion factor separately revealed that only the negative factor was a moderator in the relationship (β=.21). Also, the negative factor had stronger associations with all variables compared to the positive factor. These results provide preliminary evidence that self-compassion is associated with secondary traumatic stress, distress and well-being and could act as a buffer in the relationship between secondary traumatic stress and distress. However, also the need to further research the different facets of self-compassion is highlighted. More elaborated study designs are necessary to draw certain conclusions about the role of self-compassion in the mental health of crisis line workers.

Introduction

Volunteers working in crisis hotlines are a valuable contribution to our health care system, as they can provide immediate and fast help for everyone feeling the need for it. Research shows that callers experience a significant reduction in negative feelings such as distress, anxiety and helplessness and an increase in positive feelings such as hopelessness after just one call (Hoffberg, Stearns-Yoder & Brenner, 2020; Kalafat, Gould, Munfakh & Kleinman, 2007; King, Nurcombe, Bickman, Hides & Reid, 2003). Next to these immediate effects, also positive distal effects such as decrease in psychopathology and even decrease in suicidal ideation are reported (Gould, Kalafat, Harrismunfakh & Kleinman 2007; Catanach, Betz, Tvrdy et al., 2019).

Notwithstanding the positive effects of crisis lines, its workers also have to deal with intense workplace stressors such as the continuous confrontation with psychological pain and suffering of others. Research examining the impact of stressors such as secondary traumatic stress on volunteers' mental health is still rather scare, yet existing studies report heightened rates of negative affect and psychological distress in crisis line workers, leading to fatigue, burnout and impaired functioning (Kitchingman, Caputi, Woodward, Wilson & Wilson, 2018); Willems, Drossaert, Vuijk & Bohlmeijer, 2020). However, one must mention that most of these existing studies suffer from significant shortcomings. For example, quite diverse outcome measures and not always well- validated measures were used, which makes it hard to draw valid conclusions regarding the level of mental health in the population of crisis line volunteers (Willems et al., 2020).

Next to possible detrimental effects of the work on the individual person, decreased mental health of crisis line workers could in turn also have a negative impact on the effectiveness and efficiency of the organization itself. Again, research in the specific field of crisis lines is rather scare, yet studies examining the consequences of decreased mental health in personnel of the healthcare sector in general report negative organizational consequences such as higher error- and absence rates and impaired functioning (Hall, Johnson, Watt, Tsipa & O'Connor, 2016; Johnson, Hall, Berzins et al., 2018). Taking into account the great value crisis line services offer, it is therefore important to examine further their level of decreased mental health, the factors influencing it and ways to increase well-being and work motivation. Not much research specifically examining crisis line volunteers exists, however many models regarding well-being and distress in occupational settings in general have been established (e.g. Karasek, 1979; Siegrist, 1996). Most of these models look especially into the influence of *organizational aspects*, specifically of job demands and job resources, and relate these to

distress and well-being of workers (Bakker & Demerouti, 2006). Recently, however, also the importance of *personal resources* such as optimism, gratitude or self- compassion starts to be acknowledged in the occupational setting and in models of occupational well-being (Xanthopoulou et al., 2006). Personal resources can act as a buffer, protecting workers from experiencing severe distress and reduced well-being due to high workplace stressors such as secondary traumatic stress. If this buffer effect holds true, interventions focused on increasing personal resources could be a valuable tool to increase work commitment in crisis line volunteers and thus keep them motivated to stay in their job.

The present paper therefore aims to examine the relationship between secondary stress and mental health in crisis line volunteers, and specifically explores the role of the personal resource *self- compassion* in this regard.

Self- compassion

The definition of the concept of self-compassion commonly used in research was developed by Neff (2003a) and encompasses three main components, namely *self- kindness, common humanity and mindfulness*. As the word says, self- kindness means to be understanding and friendly to oneself when experiencing a difficult or painful situation, instead of being self-critical (Neff, 2003a). The component common humanity entails the acknowledgement that everyone, also oneself, has the right to experience compassion, and to accept that "suffering, failure, and inadequacies are part of the human condition" (Neff, 2003a, p. 87). Lastly, mindfulness is an important component as well because keeping a balanced, non- judgemental stance instead of over- identifying with one's thoughts is a necessary precondition to be able to engage in self- compassion. According to Neff (2003b), each of the three components has a negative and a positive pole, which stand for compassionate and uncompassionate behaviour, respectively. In total, therefore, the concept of self-compassion has six aspects. A self-compassionate person should have high levels of the positive facets self-kindness, common humanity and mindfulness, and low levels of the negative facets self-judgement, isolation and over-identification (Neff, 2003b). Importantly, Neff (2003a) emphasizes that "while these aspects of self-compassion are conceptually distinct, […], they also interact so as to mutually enhance and engender one another" (Neff, 2003, p. 89).

Many studies provide empirical evidence for the positive effect of self-compassion on mental health (e.g. Barnard & Curry, 2011; Lopez et al., 2015; Trompetter, de Kleine & Bohlmeijer, 2016). Individuals with a high level of self-compassion show less signs of psychopathology as well as a higher level of mental well-being compared to less self-

compassionate individuals. More specifically, self-compassion was associated with a *decrease* of symptoms of depression, negative affect, anxiety, distress and rumination in several studies (e.g. Lopez et al., 2015; Lopez, Sanderman & Schroevers, 2018; Samaie & Farahani, 2011; van der Donk et al., 2020), but an *increase* of symptoms of well-being such as hopefulness and positive affect (e.g. Lopez et al., 2015; Trompetter et al., 2016). Moreover, developed therapies which aim to enhance self- compassion and thereby increase participant's mental health were shown to be effective and efficient in a range of studies (e.g. Germer & Neff, 2013; Lawrence & Lee, 2013; Wilson, Mackintosh, Power & Chan, 2019).

The mechanisms by which self- compassion buffers against psychopathology and increases well-being are explored in research as well. Germer & Neff (2013) state that self-compassion acts as a resilience mechanism, as it moderates individuals' emotional and cognitive reactions to negative situations. Accordingly, Diedrich, Grant, Hofmann, Hiller & Berking (2014) argue that self- compassion is an adaptive emotion regulation strategy that assists to cognitive reappraise as well as accept and acknowledge negative events. Studies with undergraduate students by Leary, Tate, Adams, Allen, and Hancock (2007), for example, showed that "Self-compassion was associated with lower negative emotions in the face of real, remembered, and imagined [negative] events and with patterns of thoughts that generally facilitate people's ability to cope with negative events" (Leary et al., 2007, p. 901), emphasizing the role of self-compassion in adaptive reappraisal of situations. With regard to crisis hotlines, workers seem to be frequently confronted with difficult and negative situations, as they are exposed to suffering, suicidal thoughts and other complicated problems of others (Kitchingman et al., 2018; Willems et al., 2020). Therefore, possessing self-compassion could be a useful strength for crisis line volunteers in order to be less affected by these negative stimuli regarding decreased mental health. It is possible that workers with high levels of self-compassion experience less distress in response to secondary traumatic stress and are also able to remain higher well-being, as self-compassion moderates the relationship between secondary traumatic stress and distress or well-being, respectively.

All in all, self-compassion is "an explicit human strength and building block of positive mental health" (Trompetter et al., 2016, p. 465). Accordingly, it is associated with other important human strengths or resources such as optimism, happiness, emotional intelligence and curiosity (e.g. Barnard & Curry, 2011; Neff, Rude, & Kirkpatrick, 2007). Examining the role of self-compassion as a possible moderator in the relationship between work stress and mental health in crisis line volunteers is a relevant step in order to find out more about the level of mental health in this population as well as the factors influencing it.

The two facets of self-compassion

Research shows that different facets of self- compassion have an influence on psychopathology and mental well-being, respectively. In explanation, several studies found that mainly the negative facets of self-compassion, namely self-judgement, isolation and over-identification, are related with symptoms of depression, negative affect, distress and anxiety, while the positive facets mindfulness, self-kindness and common humanity are strongly related to symptoms of well-being such as positive affect and adaptive coping, and not strongly associated with symptoms of psychopathology (e.g. Lopez et al., 2015; Lopez et al., 2018; Muris & Petrocchi, 2017; van der Donk et al., 2020). Based on these findings, it can be said that the negative side of self-compassion, namely self-criticism or self-coldness, is an important vulnerability factor of psychopathology, while high levels of self-compassion are an important protective factor (Lopez et al., 2015).

The differentiation of a negative and positive side of self-compassion and its different correlates opened a debate among researchers about the dimensionality of the construct and its mostly used measurement, the Self- Compassion scale (SCS) by Neff (2003b). Some authors argue that rather than one overall self- compassion factor, one should distinguish between two factors, namely self-compassion and self-criticism. The current paper therefore aims to explore the facets of self- compassion further by analysing not only the influence of a total self-compassion factor on distress and well-being of crisis line workers, but also the influence of the positive and the negative facet separately.

Research questions

From the argumentation above, the following research questions arise:

1. To what extend do Crisis Line workers suffer from secondary traumatic stress, distress and impaired well-being and to what extend are they self-compassionate?
2. How strong is the relation between self-compassion and secondary traumatic stress, distress and well-being, respectively?
    a. Are there differences in the association of self-compassion with secondary traumatic stress, distress and well-being, respectively, depending on whether the total self-compassion factor, the negative factor, or the positive factor of self-compassion is taken?
3. Is self- compassion a moderator in the relationship between secondary traumatic stress and distress and in the relationship between secondary traumatic stress and well-being?
    a. What are the differences in moderation using the total self-compassion factor, the negative factor, or the positive factor as the moderator variable?

Methods

Design

The present study used a cross-sectional study design with an online survey, which was available between November and December 2019. Secondary traumatic stress was the independent variable of the study, self-compassion the moderating variable and distress as well as mental well-being were the dependent variables.

Participants

The study was approved by the ethical committee of the Faculty of Behavioural and Management Studies (BMS) of the University of Twente (approval number: 190943). Crisis line workers of three different Dutch hotline services, namely "The Listen Line", "113 suicide prevention" and "MIND Correlation" took part in the study. The only inclusion criterion was that participants were actively engaged with callers of the crisis hotlines in the form of answering telephone calls, e-mails and chat conversations. Participants were recruited via their organizational e-mail address in November 2019. At the start of the survey, respondents were provided with an explanation of the study and an informed consent form.

In total, n= 1435 crisis line workers received an e-mail containing the survey. N= 1400 workers from "The Listen line" received the survey, n= 150 workers from "113 suicide prevention" and n= 25 from "MIND Correlation". In total, 593 crisis line workers (41,3%) actually took part in the study.

Procedure

Participants received the online survey via their organizational e-mail address in November 2019. The language of the survey was Dutch. Respondents were asked to follow a link in order to start the study. First, an explanation of the survey was provided after which participants were asked to give their informed consent. Next, participants were asked to fill in the online self- report questionnaire operating via Lime Survey. The questionnaire started with several demographical questions. Subsequently, participants received several scales measuring their job demands as well as job resources, their personal resources, workplace stress, engagement, personal outcomes and organizational outcomes. For the present study, only the SCS-SF (Raes, Pommier, Neff & van Gucht, 2003) measuring self-compassion, the ProQol-STS (Stamm, 2010) examining secondary traumatic stress, the MHC-SF (Keyes, 2005) assessing mental well-being and the 4KDL (Terluin, 1996) measuring distress were relevant.

The other scales were included since the study was part of a larger project examining mental health of crisis line volunteers.

After finishing the questionnaires, participants were told that they are approaching the end of the survey and the option to give some final comments was provided. In the end, participants were thanked for participation. Additionally, participants were invited to take part in a lottery with the chance to win a 20 Euro gift coupon. Reminder e-mails to fill in the survey were sent after two and four weeks. At the end of December, the questionnaire was closed.

Instruments

Demographic characteristics. Several demographical characteristics were obtained in the form of a compiled short questionnaire. First, participants were asked for age and gender. Next, they should indicate for which of the three organizations they work and whether they got paid in their job or work voluntarily. They should then state whether they completed proper training in a related working field such as nursing, social work, psychology or medicine. Afterwards, participants were asked how long they already work at the crisis line, how many hours per week they work, and whether they work from home or in an office (see Table 1 for exact wording of questions and answering options).

Secondary Traumatic Stress. The independent variable secondary traumatic stress was measured with the subscale Secondary Traumatic Stress (STS) of the Professional Quality of Life scale Version 5 (ProQOL-V) developed by Stamm (2010). The items were translated from English to Dutch by three independent translators. Translations were discussed afterwards until consensus was reached between all translators. A native speaker then translated the questionnaire back, which led to a few more changes in some items. The subscale contained ten items which were scored on a five- point Likert scale ranging from one to five. An example item is "I am preoccupied with more than one person I help". A total secondary traumatic stress score was computed by adding up the raw scores of the subscale and thus compute the total score, where high scores present higher stress levels. The reliability of the scale in this study was found to be adequate with Cronbach's alpha = 0.71.

Self-Compassion. The variable self-compassion was measured with the Self-Compassion Scale – Short form, which was developed by Raes, Pommier, Neff & van Gucht (2003), based on the before developed Self- Compassion Scale (SCS) by Neff (2003a). The scale included 12 items, scored on a five- point Likert scale with values ranging from one to five. The scale is comprised of six subscales, namely Self-Kindness, Self-Judgement, Common Humanity, Isolation, Mindfulness and Over-Identification. Each subscale contains two items.

The three positive subscales Self-Kindness, Common humanity and Mindfulness, as well as the negative subscales Self-Judgement, Isolation and Over-Identification could be summarized into one overall positive and one overall negative subscale, respectively. An example item of the positive subscale is "I try to be understanding and patient towards those aspects of my personality I don't like" (from the subscale Self- kindness). An example item of the negative subscale is "When I'm feeling down, I tend to feel like most other people are probably happier than I am" (from the subscale Isolation).

Subscale scores were calculated by taking the mean of subscale item responses. For the positive subscale, high mean scores represent a high level of self-compassion, while high mean scores on the negative subscales represent a high level of self- criticism. Reliability of the two subscales was found to be adequate for the positive subscale (Cronbach's alpha = 0.72) and good for the negative subscale (Cronbach's alpha = 0.83). A total self- compassion score was computed by first reversing the scores of the negative subscale items and afterwards computing the total mean. High mean scores show that participants have high levels of self- compassion. The reliability of the total scale was good with Cronbach's alpha = 0.80.

Mental well-being. The variable mental well-being was assessed using the Mental Health Continuum- Short Form developed by Keyes (2005). In the present study, the scale included 14 items, scored on a five- point Likert scale with values from one to five. An example item is "During the past month, how often did you feel … happy". Three subscales exist in the MHC- SF, namely the subscales emotional well-being, psychological well-being and social well-being. To compute a total score, the raw scores of all items were added up. The subscale scores were calculated by adding up the item subscale scores. High scores mean high mental well-being. The reliability of the subscales was adequate to good (Cronbach's alpha = 0.76 for emotional well-being; 0.71 for social well-being; 0.83 for psychological well-being). The reliability for the total scale was good as well (Cronbach's alpha = 0.88).

Distress. The variable distress was measured using the subscale of distress of the Vierdimensionale Klachtenlijst developed by Terluin (1996). The subscale entails 16 items which are scored on a five- point Likert scale with values ranging from one to five. An example item is "Have you been depressed in the past week?". To compute a total score, item response options two to five were first summarized into the response option two, meaning that only three item response options were used when analysing the data. Afterwards, the total score was computed by adding up the raw scores of the items. High scores on the scale mean a high level of distress in participants. The reliability of the scale was found to be good to excellent with Cronbach's alpha of 0.88.

Data analysis

To analyse the data, IBM SPSS Statistics 26.0 was used. Descriptive statistics including the mean and standard deviation of the variables workplace stress, self-compassion (total factor, negative subscale and positive subscale), well-being and distress were obtained. To answer the first research question, namely to what extent crisis line volunteers suffer from impaired well-being and distress, and to what extend they experience secondary traumatic stress as well as self-compassion, descriptive statistics were compared to other studies and if applicable to the norms provided by the developers of the relevant tests.

Next, to examine the second research question, namely how strong the relation between self-compassion (total factor, positive factor and negative factor) and secondary traumatic stress, distress and well-being is, correlations were obtained. Due to a non- normal distribution of the variables, Spearman rank correlation coefficients were calculated. Correlation coefficients above 0.3 represented moderately strong associations, while coefficients below 0.3 were classified as weak correlations.

Furthermore, to answer the third research question about the moderating effect of self-compassion, the PROCESS macro developed by Hayes (2017) was installed to SPSS 26.0 first. Before conducting the moderation analysis, assumptions of moderation were tested. Outliers were identified by obtaining Mahalanobis, Cook's and Leverage values and calculating their cut off scores. Participants who scored above at least two of these cut-off scores were classified as outliers. Analysis was done with and without these outliers to check if they needed to be removed from the dataset. Finally, it was decided to only omit participant with ID 816 as he was classified as an extreme outlier and significantly influenced the results of the moderation analyses. For the sake of completeness, results with the outlier are nevertheless presented in appendix 2. Next, six separate moderation analyses using the regression macro were conducted. First, the moderation effect of self-compassion on the association between secondary traumatic stress and distress was analysed. The total factor, the negative factor and the positive factor of self-compassion were individually used as the moderator variable, which means that in total three moderation analyses were conducted. Next, the moderation of self-compassion on the relationship between secondary traumatic stress and well-being was analysed. The total factor, the negative factor and the positive factor of self-compassion were again separately used for analyses. In order to present results in a clear fashion, the model statistics of those moderation analyses that had insignificant interaction effects were presented in appendix 1.

Results

Characteristics of the study group

Descriptive statistics of the final sample can be found in table 1. The final sample consisted mainly of female crisis line workers aged around 60, working four to six hours per week. Most participants were working on a volunteering basis and did not complete proper training in a related working field such as nursing, social work, psychology or medicine before. The study group was heterogeneous regarding the location from where workers execute their job, as well as the time they are already doing their job. Lastly, most participants were from the organization "The Listen Line".

Table 1
Descriptive statistics of demographic variables (N= 593)

	N (%)	Mean (SD)
Age		61.03 (13.0)
Sex		
female	426 (71.8)	
male	166 (28.0)	
other	1 (0.2)	
Occupational status		
Volunteers	563 (94.9)	
Paid workers	30 (5.1)	
Which organization?		
Listen Line	543 (91.6)	
113 suicide prevention	39 (6.6)	
MIND correlation	11 (1.9)	
Proper training completed?		
Yes	234 (39.5)	
No	359 (60.5)	
How long already working?		
% less than a year	134 (22.6)	
% 1-3 years	204 (34.4)	
% 3-6 years	93 (15.7)	
% 6-10 years	63 (10.6)	
% more than 10 years	99 (16.7)	
How many hours per week?		
% less than 4 hours	104 (17.5)	
% between 4 and 6 hours	414 (69.8)	
% between 6 and 8 hours	35 (5.9)	
% between 8 and 10 hours	9 (1.5)	
% more than 10 hours	31 (5.2)	
From where are you working?		
% always in the organization	158 (26.6)	
% mostly in organization, sometimes at home	111 (18.7)	
% sometimes in organization, sometimes at home	56 (9.4)	
% mostly at home, sometimes in organization	126 (21.2)	
% always at home	142 (23.9)	

Note: N= 1 participant was excluded when obtaining the descriptive statistic of age due to a missing value in this variable

The level of Secondary Traumatic Stress, self-compassion and mental health in crisis line volunteers

To answer research question one, namely to what extent crisis line volunteers suffer from impaired well-being and distress, and to what extend they experience secondary traumatic stress and self-compassion, descriptive statistics were obtained. These were compared to reference scores provided by the developers of the relevant tests as well as to comparison scores of other studies. Means and Standard Deviations of the relevant variables are presented in table 2.

Table 2

Descriptive statistics and comparison scores for the variables secondary traumatic stress, self-compassion (total, negative and positive factor), mental well-being and distress of the total sample (N=593)

	M (SD)	N (%)	Comparison scores	Wilcoxon signed rank test
Distress	6.5 (5.7)		4.2 (5.2) [a]	$Z = 6.9, p < 0.01$
Low score (≤ 10) [b]		478 (80.7)		
Medium score (11-20)		94 (15.8)		
High score (21-32)		21 (3.5)		
Mental well-being	3.7 (0.6)			
Secondary traumatic stress	16.5 (3.9)		22.6 (6.1) [c]	$Z = -20.3, p < 0.01$
Low score (≤ 22) [d]		555 (93.6)		
Medium score (23-41)		37 (6.2)		
High score (≥ 42)		1 (0.2)		
Self-compassion	3.6 (0.5)		3.3 (0.5) [e]	$Z = 14.0, p < 0.01$
			3.3 (0.7) [f]	$Z = 14.0, p < 0.01$
Negative facet of self-compassion	2.4 (0.7)		2.3(0.8) [g]	$Z = 6.2, p < 0.01$
Positive facet of self-compassion	3.7 (0.5)		3.1 (0.7) [g]	$Z = 19.4, p < 0.01$

a. Terluin, Van Rhenen, Schaufeli & De Haan (2004). Distress in a working population.
b. Terluin, Terluin, Prince & van Marwijk, H. (2008). De Vierdimensionale Klachtenlijst (4DKL)
c. Okoli, Seng, Otachi et al. (2020). Secondary traumatic stress among healthcare workers
d. Stamm (2010). The concise ProQOL manual
e. Lopez, Sanderman, Smink et al. (2015). Self-compassion in the Dutch population
f. Miller, Lee, Shalash & Poklembova (2019). Self-compassion among social workers
g. Lopez, Sanderman & Schroevers (2018). Negative and Positive facet of Self-compassion in the general Dutch population

Distress. The results suggest that in contrast with expectations, crisis line workers did not experience distress to a significantly high extend. In this sample, 80.7% had a low score on the 4DKL, meaning that most respondents did experience distress to a normal extend and thus do not necessarily need to take action to reduce their tensions. However, it can still be said that compared to a representative sample of the Dutch population, crisis line workers in this sample

experienced slightly but significantly higher levels of distress. Still, these levels were in the range of low distress as categorized by the developers of the scale.

Mental well-being. The results of this study could not be compared to other studies and reference scores, since a different number of item response options was used. While this study utilized a 5- point Likert scale, the developer and other studies used a 6- point Likert scale. Nevertheless, a mean score of 3.7 (SD = 0.57) suggested a moderately high level of mental well- being in crisis line volunteers.

Secondary traumatic stress. Against expectations, the results show that crisis line workers in this sample did not have a high level of secondary traumatic stress. 93.6% of the workers in this sample had a low total score on the ProQOL-STS, meaning they did not seem to suffer from being confronted with trauma and pain of others to an alarming extend. Additionally, the mean score of this sample was significantly lower compared to a reference sample of social workers, providing further evidence that crisis line workers in this sample did not have the same or higher levels of secondary stress than workers in a comparable field.

Self-Compassion. The results suggest that crisis line workers had a high level of self-compassion. Compared to a representative sample of the general Dutch population and a sample of social workers, the mean of the present sample for the total factor of self-compassion was significantly higher. With regard to the subscales of the positive and negative facet of self-compassion, crisis line workers had a higher score on the positive facet of true self-compassion compared to a sample of the general Dutch population, but also had a slightly higher score on the negative facet self-criticism.

The association between self-compassion (total factor, negative factor, and positive factor) and secondary traumatic stress, well-being and distress

In order to examine the second research question, namely how strong the relation between self-compassion (total factor, positive factor and negative factor) and secondary traumatic stress, distress and well-being is, Spearman rank correlations between all variables were obtained and are presented in table 3.

Table 3

Spearman's rank correlations between the variables secondary traumatic stress, self- compassion, distress and well-being (N=593)

Variables	1	2	2a	2b	3	4
1. Secondary Traumatic stress	-					
2. Self-compassion	-.28**	-				
2a. Positive facet	-.15**	.69**	-			
2b. Negative facet	.30**	-.86**	-.28**	-		
3. Distress	.28**	-.38**	-.15**	.45**	-	
4. Well-being	-.20**	.38**	.27**	-.36**	-.36**	-

** *p < .01*

To start with, results showed that secondary traumatic stress was positively correlated with distress (r= .28) and negatively with well-being (r= -.20). This supports the general idea that higher levels of secondary traumatic stress led to higher levels of distress and lower levels of well-being, respectively. Moreover, the total self-compassion factor was positively associated with well-being (r= .38) and negatively with distress (r= -.38). The strength of the relation was moderately strong for both variables.

Regarding the different facets of self-compassion, the obtained correlations suggest that they had indeed different associations with the other variables of interest. The negative facet seems to be related to signs of psychopathology, as it was positively related to distress (r= .45) and secondary traumatic stress (r= .30) and negatively to well-being (r= -.36). Additionally, the correlation of the negative facet was stronger with distress than with well-being. Overall, all associations were significant and moderately strong. In contrast, the positive facet seems to be associated with positive mental health as it was positively correlated with well-being (r= .27) and negatively with distress (r=-.15) and secondary traumatic stress (r=-.15). The results show that the correlation of the positive facet with well-being was stronger than with distress. Overall, however, all correlations between the positive facet and the other variables were significant but rather weak, indicating that the negative facet was more strongly associated with all variables examined than the positive facet.

Is the relation between secondary traumatic stress and mental health - both distress and well- being - moderated by self-compassion?

Moderation on distress. First, it was analysed if self-compassion is a moderator in the relationship between secondary traumatic stress and distress using PROCESS. Three separate moderation analyses were performed with the total self-compassion factor, the negative factor and the positive factor as the moderator variables, respectively.

Total factor. Test statistics of the whole model are summarized in table 4. The dependent variable was distress, the independent variable was secondary traumatic stress and the moderator variable was the total self-compassion factor. The overall model was significant. The explained variance was $R^2 = 0.22$, which means that 22% of the variation in the dependent variable distress could be explained by the model.

Table 4
Model statistics of the moderation analysis with the independent variable secondary traumatic stress, the moderating variable self-compassion total and the dependent variable distress (N=592)

	F	ß	t	p
Overall model	55.06			< .001
Secondary traumatic stress		.30	5.15	< .001
Self-compassion - total		-4.58	-9.57	< .001
Interaction effect		-.29	-2.34	.02
Low level		.43	5.9	< .001
Average level		.30	5.15	< .001
High level		.17	1.98	.048

Note: statistics were obtained using the PROCESS tool by Hayes and Preacher (2017);
Participant number 816 was omitted for final analysis, model statistics with outlier are found in appendix 2a

The interaction effect between secondary traumatic stress and self-compassion was significant (*ß*= -.29), which indicates that self-compassion was a moderator in the relation between secondary traumatic stress and distress. Further exploration of this effect (see figure 1) revealed that for individuals with high levels of self-compassion, secondary traumatic stress had less impact on distress than for those with lower levels of self-compassion. Put the other way around, as self-compassion decreased, the effects of secondary traumatic stress on distress increased.
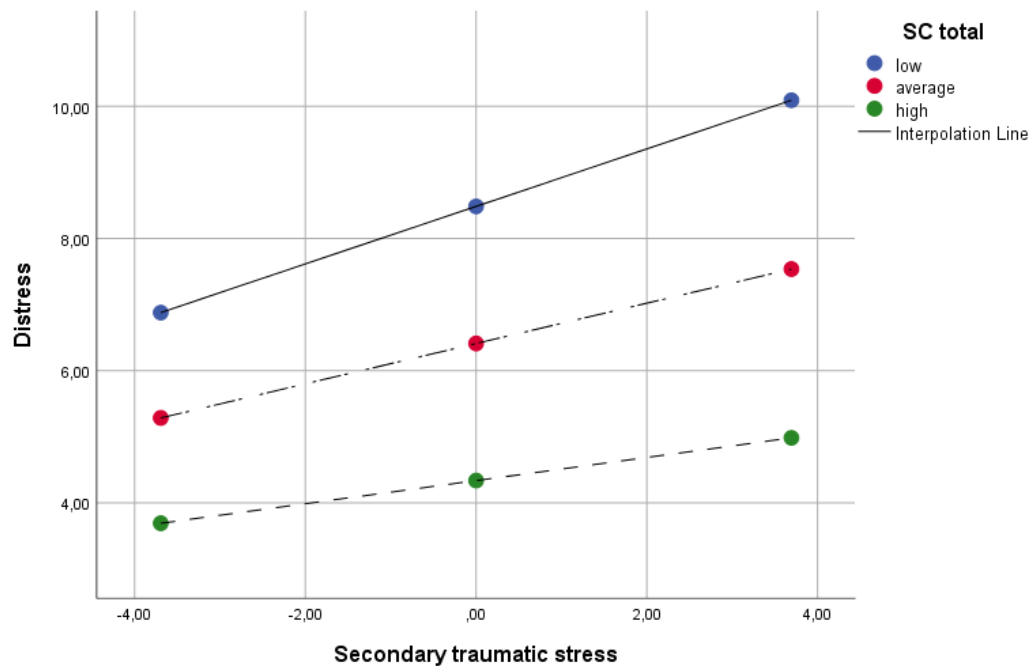
Figure 1. Visualization of the conditional effect of secondary traumatic stress on distress at different levels of self-compassion

Negative facet. Table 5 provides a summary of the test statistics of the whole model. The dependent variable was distress, the independent variable was secondary traumatic stress and the moderator variable was the negative self-compassion factor. The overall model was significant. 25% of the variation in the dependent variable distress could be explained by the model.

Table 5
Model statistics of the moderation analysis with the independent variable secondary traumatic stress, the moderating variable self-compassion negative and the dependent variable distress (N=592)

	F	ß	t	p
Overall model	63.53			< .001
Secondary traumatic stress		.29	4.89	< .001
Self-compassion - negative		3.48	10.73	< .001
Interaction effect		.21	2.55	.011
Low level		.15	1.69	.09
Average level		.29	4.89	< .001
High level		.42	5.84	< .001

Note: statistics were obtained using the PROCESS tool by Hayes and Preacher (2017);
Participant number 816 was omitted for final analysis, model statistics with outlier are found in appendix 2a

The interaction effect between secondary traumatic stress and the negative self-compassion facet, namely self-criticism, was significant (*ß*= .21), which indicates that the negative facet of self-compassion was a moderator in the relation between secondary

traumatic stress and distress. More specifically, the interaction effect got significant for individuals with average and high levels of self-criticism. As can be seen in figure 2, individuals with higher levels of self-criticism experience more distress in response to secondary traumatic stress.
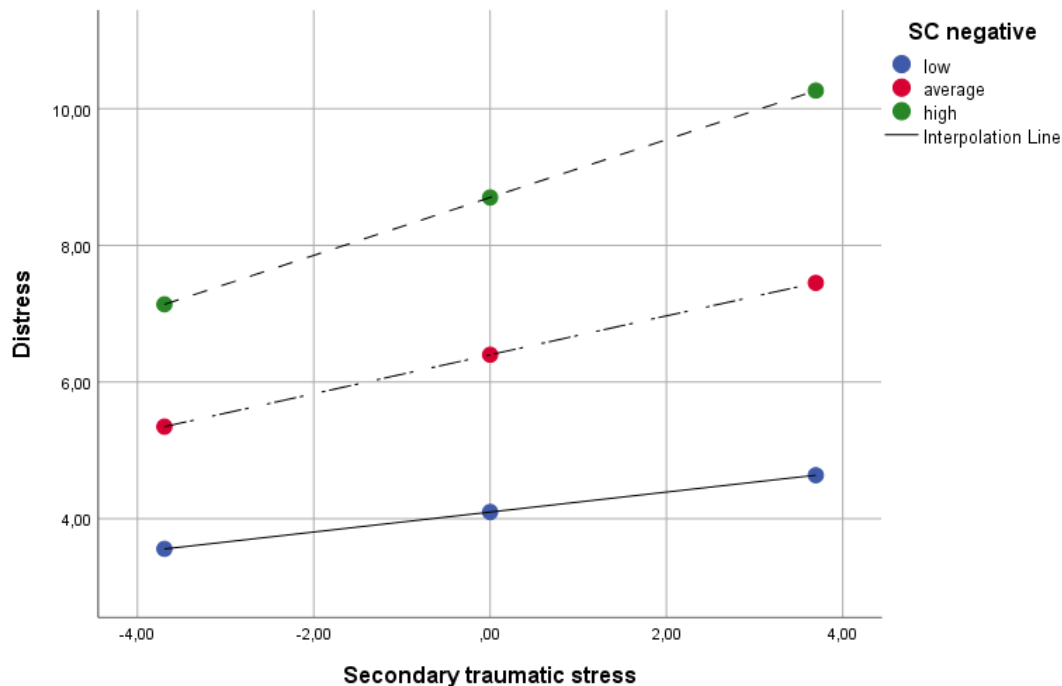

Figure 2. Visualization of the conditional effect of secondary traumatic stress on distress at different levels of the negative facet of self-compassion

Positive facet. The dependent variable of this analysis was again distress. The independent variable was secondary traumatic stress and the moderator variable was the positive self-compassion factor. The overall model was significant and the explained variance was $R^2 = 0.12$, which means that 12% of the variation in the dependent variable distress could be explained by the model. The interaction effect between secondary traumatic stress and the positive self-compassion facet was statistically insignificant ($p = 0.59$). Therefore, the positive facet of self-compassion on its own was not found to be a moderator in the association between secondary traumatic stress and well-being. Test statistics of the model are summarized in Appendix 1a.

Moderation on well-being. Next, it was also tested if self-compassion was a moderator in the relationship between secondary traumatic stress and mental well-being. Again, three separate moderation analyses were performed with the total self-compassion factor, the negative factor and the positive factor as the moderator variables, respectively. Test statistics of all models can be found in Appendix 1b.

Total factor. The dependent variable was well-being, the independent variable was secondary traumatic stress and the moderator variable was the total self-compassion factor. The overall model was significant and the explained variance was $R^2 = 0.17$, which means that 17% of the variation in the dependent variable distress could be explained by the model. The interaction effect between secondary traumatic stress and self-compassion was statistically insignificant. Therefore, the present results do not provide evidence that self-compassion is a moderator in the relationship between secondary traumatic stress and well-being.

Negative facet. The dependent variable of the moderator analysis was again well-being. The independent variable was secondary traumatic stress and the moderator variable was the negative self-compassion facet, namely self-criticism. The overall model was significant. Results suggested that 17% of the variation in the dependent variable distress could be explained by the model. The interaction effect between secondary traumatic stress and self-criticism was statistically insignificant. Therefore, no supporting evidence that self-criticism is a moderator in the relationship between secondary traumatic stress and well-being could be found. In appendix 1b a summary of the mode statistics is presented.

Positive facet. The dependent variable of the moderator analysis was well-being. The independent variable was secondary traumatic stress and the moderator variable was the positive self-compassion facet. The overall model was significant. Results suggested that 9% of the variation in the dependent variable distress could be explained by the model. The interaction effect between secondary traumatic stress and the positive self-compassion facet was statistically insignificant. Therefore, the positive facet of self-compassion was not found to be a moderation in the relationship between secondary traumatic stress and well-being in this study. In Appendix 1b, a summary of the test statistics of the complete model is presented.

Discussion

The aim of the study was to examine the level of secondary traumatic stress, distress and mental well-being in crisis line workers and to explore the role of self-compassion in the association between these variables. The study was one of the first to examine the impact personal resources have on the mental health of crisis line workers. Results suggested that crisis line workers in this study did not suffer from impaired well-being and high levels of distress or secondary traumatic stress. However, they did show rather high levels of self-compassion. Moreover, self-compassion was found to be a moderator in the relationship between secondary traumatic stress and distress.

The level and relationship of Secondary Traumatic Stress, Self-compassion and mental health in crisis line volunteers

In contrast to expectations, the results of this study revealed that most crisis line workers did not suffer from impaired well-being and high levels of distress or secondary traumatic stress. 80.7% of participants had a low distress score, which Terluin et al. (2008, p. 253) categorize as "low tensions; in principle no action needed". Nevertheless, compared to a representative sample of the Dutch population, crisis line workers show slightly higher levels of distress (Terluin, Van Rhenen, Schaufeli & De Haan, 2004). Additionally, still 20% experienced middle or high distress levels, which shows that for a part of crisis line workers distress remains a topic worth to tackle. With regard to secondary traumatic stress, 93,6% of the workers had a "low level" as categorized by the developers of the scale (Stamm, 2010). The level was also low compared to a sample of healthcare workers (Okoli, Seng, Otachi et al., 2020). Lastly, the level of well-being in this sample could not be compared to other studies, yet the mean score suggests a rather high level of well-being. In contrast to these findings, many studies found that staff in the healthcare sector suffers from impaired mental well-being, heightened levels of distress and secondary traumatic stress (e.g. Bridger, Binder & Kellezi, 2019; Hall et al., 2016; Johnson et al., 2018; Okoli et al., 2020). Studies specifically examining crisis line volunteers are still rather scare, yet those existing report higher levels of decreased mental health and secondary traumatic stress as well (e.g. Cross, 2017; Cyr & Dowrick, 1991; Kitchingman et al., 2018; Roche & Ogden, 2017; Yanay & Yanay, 2008).

There are several possible explanations for the contradicting findings. First, previous studies used quite diverse outcome measures and additionally not always used well- validated measures. Willems et al. (2020) indicate that this diversity could lead to quite different levels of mental health reported in different studies. Another factor influencing the contradicting results could involve the fact that most participants were volunteers. When experiencing severe distress, the threshold to quit work might be higher in volunteers compared to paid workers. Yanay & Yanay (2018) fittingly found that high drop-out rates of crisis line volunteers are typical after a short time. Consequently, it is possible that those workers with highest distress levels were not part of the studied organizations anymore, as they dropped out of their work. To examine this issue, future studies could profit by examining in the sample organizations how many volunteers dropped out during past months and try to gain an understanding for their reasons. This could aid the understanding of how large the problem of distress and impaired mental health really is.

To continue, differences in the structure of the organizations could also be a factor influencing the different levels of workers' mental health found in various studies. Research shows that the satisfaction with aspects of the organization, such as the level of support received and the feeling of appreciation, has an influence on employees' well-being (Bakker & Demerouti, 2006; Willems et al., 2020). In favour of this argument, Yanay & Yanay (2008), for example, interviewed former crisis line workers and found that secondary traumatic stress was experienced mainly in response to not feeling sufficiently supported by their organization and not having received clear guidance on how to act and what to say. Possibly, workers of the crisis lines in the present study had lower levels of secondary traumatic stress as they were satisfied with the training and guidance received. Future research should consider these organizational aspects in their studies of mental health in crisis line workers. Moreover, next to differences in the organization, also differences in the level of *personal resources* could partly explain the high level of mental health found in this sample. More specifically, results suggested that crisis line workers in this study have high levels of self-compassion compared to a representative sample of the Dutch population and a sample of social workers (Lopez et al., 2015; Lopez et al., 2018; Miller et al., 2019). Additionally, an increase in self-compassion was associated with a decrease in distress and an increase in well-being. This is in line with previous studies showing an association between self-compassion and decreased levels of negative effect, depression and other signs of mental illness and increased levels of signs of well-being such as positive affect (e.g. Lopez et al., 2018; Samaie & Farahani, 2011; Trompetter, 2016; van der Donk et al., 2020). The results could therefore support the notion that self-compassion is an important adaptive emotion regulation strategy that buffers against the experience of psychopathology and fosters emotional resilience (Diedrich et al., 2014; Leary et al., 2007). All in all, one can suggest that self-compassion seems to be an important factor in crisis line workers mental health and worth considering further. Future studies should try to go beyond simple correlational studies and design experiments to further test the impact of self-compassion on the mental well-being of crisis line workers. For example, research already found that compassion focussed therapy (CFT) helps to decrease distress and increase well-being in several populations. Researcher could teach crisis line workers skills from CFT and compare levels of distress and well-being before and after training. This would help to shed more light on the importance of self-compassion in the population of crisis line workers and volunteers.

The two facets of self-compassion

In line with expectations, results showed differences in the association of the negative factor and the positive factor of self-compassion, as measured with the SCS-SF (Raes, Pommier, Neff & van Gucht, 2003), with secondary traumatic stress, well-being and distress. The negative facet of self- compassion, consisting of over-identification, self-judgement and isolation, was positively related with secondary traumatic stress and distress and negatively with well-being. The association with distress was overall stronger than with well-being. In contrast, the positive facet, consisting of mindfulness, self-kindness and common humanity, was positively related with mental well-being and negatively with the other variables. The association with well-being was overall stronger than with distress. These results are in line with previous research stating that self-compassion as measured with the SCS should be divided into two factors, whereby the negative, self-critical factor is related to psychopathology and the positive factor to well-being (e.g. Lopez et al., 2015; van der Donk, 2010). Interestingly, however, the negative facet in this study had stronger associations with all variables than the positive facet. Muris & Pettrocchi (2017) found similar results and consequently call for caution when interpreting the SCS. According to the authors, the negatively worded items of isolation, over-identification and self-judgement in reality do *not* reflect true self-compassion but are *conceptually distinct* from it. Instead, they are well- known problematic cognitive processes which can lead to psychopathology. Accordingly, the negative items are likely to exaggerate the link between self-compassion and psychopathology. The results of the present study might support this argument, as the negative factor self-criticism was more strongly related to all variables than the positive factor self-compassion. In order to detect and research true self-compassion, Muris & Pettrocchi (2017) argue that a revision of the SCS or a new instrument is necessary. Recently, for example, the Oxford Compassion Scale of the Self (SOCS-S) by Gu, Baer, Cavanagh, Kuyken & Strauss (2019) was developed. An advantage of this scale is that it only includes positively worded items and thus avoids the mistake to include items which do not reflect true self-compassion but rather processes involved in the development of psychopathology. Further validation and application of this scale could lead to new and changing insights into the true role of self-compassion in the association with variables such as secondary traumatic stress, distress and well-being.

Self-compassion as a moderator

The third research question asked more specifically about the relationship between all three variables secondary traumatic stress, self-compassion and distress or well-being,

respectively, namely if self- compassion is a moderator in the relationship between secondary traumatic stress and distress and in the relationship between secondary traumatic stress and well-being. With regard to distress, results suggested that the total self-compassion factor was a moderator in the relationship between secondary traumatic stress and distress. Individuals with higher levels of self-compassion are less likely to experience distress in response to secondary traumatic stress than individuals with lower levels of self-compassion. One the one hand, these findings might provide preliminary evidence that self-compassion indeed acts as a buffer against psychopathology, which could explain why volunteers in this sample, having a general high level of self-compassion, did not show high levels of distress. On the other hand, the results of the moderation analyses of both factors separately could offer a different explanation. Only the negative factor self-criticism was found to be a moderator in the relationship between secondary traumatic stress and distress. In explanation, individuals with higher levels of self-criticism experience more distress in response to secondary traumatic stress than individuals with less self-criticism. For the positive factor self-compassion, no moderation effect was found. This could provide evidence in favor of Muris & Pettrocchi (2017), who explain that using a total self-compassion score based on the SCS might exaggerate the link between self-compassion and psychopathology and thus could overestimate the positive value the concept is thought to have (Muris & Pettrocchi, 2017). As mentioned before, the application of a different instrument which measures only the positive aspects of self-compassion, such as the SOCS-S, could lead to deeper insights into the moderating effect of true self-compassion.

Considering well-being, results could not confirm that self-compassion acts as a moderator in the relationship between secondary traumatic stress and well-being. This held true for the total factor, the negative factor and also the positive factor. In accordance with this finding, much more studies can be found that report significant associations of the total self-compassion factor with signs of psychopathology than with signs of well-being (e.g. Lopez et al., 2015; Lopez et al., 2018; Samaie & Farahani, 2011; van der Donk et al., 2020). All in all, these results additionally highlight the importance of studying the concept of self-compassion further, and if applicable using different measures to assess levels of self-compassion, before drawing conclusions about its true protective or buffering effect.

Strengths and Limitations

The present study has some strong points to offer but contains limitations as well. To start with strengths, the sample size of the present study was large. Most of the - anyway small amount of - studies examining the mental health of crisis line workers have smaller sample

sizes, which puts the present study in an advantageous position. A large sample size increases the power of the study and the certainty to draw valid conclusion. As another strong point, the study used several well- validated questionnaires which additionally increases the warranty to draw valid conclusions. Lastly, the study was one of the first to examine the impact personal resources can have on the mental health of workers.

However, also weaknesses can be reported. A first limitation is that the MHC-SF in this study contained different response options compared to the original scale. Consequently, a comparison of scores with other studies was not possible. This would have been relevant in order to examine more thoroughly to what extend crisis line workers experience impaired levels of well-being. Second, the study did not control for drop-out rates of crisis line volunteers that happened before the administration of the survey. Drop-out rates might have biased the results regarding the levels of secondary traumatic stress, distress and well-being in crisis line volunteers: possibly, those workers with highest distress levels were not part of the organization anymore as they dropped out of their work, which would lead to seemingly low levels of distress and secondary traumatic stress, not reflecting the real levels.

Lastly, as a third limitation one can state that the study was correlational in nature, which makes it difficult to draw causal conclusions. Based on the results, it can be assumed that crisis line workers show reduced levels of distress due to their high levels of self-compassion or low levels of self-criticism, however, no certain conclusions can be drawn. A more elaborated study design, for example an experiment with pre- post- control group design, could lead to deeper insights into the working mechanism of self-compassion on distress and well-being in crisis line volunteers.

Recommendations

Based on the discussion so far, recommendations for further research can be stated. To start with, future studies probably would profit from including ways to measure drop-out rates in their design. For example, the organizational manager could be asked for drop-out rates that happened in the last time. Additionally, one could follow an organization for a longer period of time and ask workers who quit during this time for their intentions and reasons. This could shed more light on the actual level of secondary traumatic stress, distress and impaired well-being of crisis line volunteers. Additionally, by means of those longitudinal studies one could compare the level of self-compassion of the workers who quit to those who still work in the organization, to see if workers with low self-compassion are more likely to quit.

As another point, the results of this study highlight the relevance of analysing the differences between the negative and the positive items of the Self-Compassion Scale developed by Neff (2003a) further. There is accumulating evidence that the negatively worded items do not truly measure self-compassion but rather the distinct concept self-criticism. If this holds true, a new measure to assess self-compassion, such as the newly developed SOCS-SC, might be more relevant, as it only contains positively worded items measuring true self-compassion. Research focused on validating this measure is recommended.

Lastly, the results of this study were limited by a correlational study design. Further research employing more advanced study designs is necessary to substantiate the links as found in this study. For example, one could design an intervention based on skills and insights of compassion focussed therapies and administer it to a group of crisis line volunteers. Based on that, an experiment with a pre- posttest control group design could be developed which might help to draw more certain conclusions about the influence of self-compassion on the mental health of crisis line volunteers and workers.

Conclusion

To conclude, the present study provides preliminary evidence that self-compassion is associated with secondary traumatic stress, distress and well-being and could act as a moderator, or buffer, in the relationship between secondary traumatic stress and distress. However, the study also highlighted the inherent problems of the most frequently used scale to measure self-compassion. More research is needed to develop new, valid measures of self-compassion. Additionally, more elaborated study designs are necessary to draw certain conclusions about the moderating effect of self-compassion on the mental health of crisis line volunteers. Insights into the working mechanisms of personal resources such as self-compassion could be valuable tool to foster positive mental health in crisis line volunteers.

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Appendices

Appendix 1: Statistics of the moderation analyses with insignificant interaction effects

Appendix 1a: Model statistics of the moderation analyses on distress

Model statistics of the moderation analysis with the independent variable secondary traumatic stress, the moderating variable self-compassion and the dependent variable distress (N=592)

	F	ß	t	p
Positive factor				
Overall model	26.17			< .001
Secondary traumatic stress		.43	7.15	< .001
Self-compassion - positive		-1.83	-3.69	< .001
Interaction effect		-.25	-1.89	.059

Note: statistics were obtained using the PROCESS tool by Hayes and Preacher (2017)
Participant number 816 was omitted for final analysis, model statistics with outlier are found in appendix 2a

Appendix 1b: Model statistics of the moderation analyses on well-being

Model statistics of the moderation analysis with the independent variable secondary traumatic stress, the moderating variable self-compassion and the dependent variable well-being (N=592)

	F	ß	t	p
Total factor				
Overall model	40.20			< .001
Secondary traumatic stress		-.21	-2.49	.013
Self-compassion - total		6.55	9.48	< .001
Interaction effect		-.14	-.76	.447
Negative factor				
Overall model	35.42			< .001
Secondary traumatic stress		-.23	-2.64	.008
Self-compassion - negative		-4.13	-8.58	< .001
Interaction effect		.14	1.13	.26
Positive factor				
Overall model	19.48			< .001
Secondary traumatic stress		-.34	-3.93	< .001
Self-compassion - positive		4.09	5.82	< .001
Interaction effect		.25	1.33	.19

Note: statistics were obtained using the PROCESS tool by Hayes and Preacher (2017)
Participant number 816 was omitted for final analysis, model statistics with outlier are found in appendix 2b

Appendix 2a: Model statistics of the moderation analyses on distress including the outlier

Model statistics of the moderation analysis with the independent variable secondary traumatic stress, the moderating variable self-compassion and the dependent variable distress (N=593)

	F	ß	t	p
Total factor				
Overall model	53.54			< .001
Secondary traumatic stress		.26	4.64	< .001
Self-compassion - total		-4.73	-9.92	< .001
Interaction effect		-.35	-2.87	< .001
Negative factor				
Overall model	60.75			
Secondary traumatic stress		.23	4.18	< .001
Self-compassion - negative		3.58	10.99	< .001
Interaction effect		.22	2.70	.007
Positive factor				
Overall model	24.47			
Secondary traumatic stress		.38	6.68	< .001
Self-compassion - positive		-2.04	-4.14	< .001
Interaction effect		-.37	-2.91	.004

Appendix 2b: Model statistics of the moderation analyses on well-being including the outlier

Model statistics of the moderation analysis with the independent variable secondary traumatic stress, the moderating variable self-compassion and the dependent variable well-being (N=593)

	F	ß	t	p
Total factor				
Overall model	39.08			< .001
Secondary traumatic stress		-.14	-1.76	.079
Self-compassion - total		6.75	9.81	< .001
Interaction effect		-.05	-.26	.79
Negative factor				
Overall model	33.98			< .001
Secondary traumatic stress		-.16	-1.92	.06
Self-compassion - negative		-4.24	-8.79	< .001
Interaction effect		.12	.98	.33
Positive factor				
Overall model	18.96			< .001
Secondary traumatic stress		-.28	-3.42	.001
Self-compassion - positive		4.34	6.22	< .001
Interaction effect		.39	2.18	.03