

The relation between self-compassion, health behaviours and physical health

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Abstract

Background: There is a growing evidence that displays an association between self-compassion and health behaviours in promoting the general well-being among individuals. Research has found that higher self-compassion can be generally associated to increased health behaviours (Sirois et al., 2015). Until now, however, no differentiation between individual health behaviours in their association to self-compassion has been made.

Aim: This research aimed at discovering the different associations between the health behaviours ‘stress management’, ‘physical activity’, ‘eating behaviour’ and self-compassion. Moreover, it was tested if physical health can be associated to self-compassion. Furthermore, it was tested if the two used self-compassion measures correlate with each other.

Methods: The study design involved a cross-sectional correlation descriptive questionnaire. An online survey design was implemented. The sample consisted of 204 individuals, ranging from 18 to 82 years, covering three different nationalities.

Results: Strong significant negative association was shown between the two self-compassion measures ($r(202) = -0.74$). This study displayed a significant association between self-compassion and eating behaviours (SCS-SF = .14, FSCRS = -.23). Stress management and physical activity were found to not be significantly associated with self-compassion (SCS-SF = .06, FSCRS = -.08, SCS-SF = .06, FSCRS = -.08). A significant association was shown between self-compassion and physical health (SCS-SF = -.32, FSCRS = .39).

Conclusion: It can be stated that even though self-compassion has a general effect on health behaviours, a distinction between them must be made as not all of them are equally associated with self-compassion. It is advisable for future research to investigate further health behaviours to fully understand the underlying factors which promote them, in order to improve general societal well-being. As this research displayed the similarity of the two self-compassion measures in measuring self-compassion further research can use both instruments for assessing self-compassion.

Keywords: self-compassion, health behaviours, eating behaviour, stress management, physical activity, physical health

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Introduction

A growing field of research indicates a connection between self-compassion and health promoting behaviours. More specifically, Sirois et. al (2015) propose that individuals higher in self-compassion display an increased execution of positive health behaviours. When looking at a person's general well-being, the part of self-initiated effort and action plays, should not be understated. Engaging in positive forms of health behaviour is of immense importance as they make up a total 60 percent of a person's overall lifestyle and health (WHO, 2009). If the presence of self-compassion then is thought to increase these positive behaviours, a closer look at how they relate seems inevitable.

Health behaviours were classified by Morrison and Bennett (2016) as behaviours which are executed to protect, maintain and promote health. These health behaviours are, for example, healthy eating habits, exercising regularly and stress management (Wang, Ou, Chen & Duan, 2009). These can be seen as health behaviours as a healthy nutrition and regular exercise reflect positively on bodily well-being, while an ability to handle stress well and balanced reflects on psychological well-being. On the contrary, the consumption of tobacco, excessive drinking and irregular sleeping patterns are classified as unhealthy forms of behaviour that increase the likelihood of disease and an unhealthy lifestyle (WHO, 2009). Due to the importance of the execution of positive health behaviours, more and more research is focusing on finding various beneficial approaches, such as different health interventions, through which they can be enhanced.

Self-Compassion

The more scientific meaning of self-compassion has mostly been worked on by Kirstin Neff and Paul Gilbert. Neff's broadest definition of self-compassion is, 'We give ourselves the same kindness and care we'd give to a good friend' (Neff, 2019). More explicitly, she divides self-compassion into three constructs. Firstly, self-kindness vs. self-judgment. This includes having a deep understanding for oneself rather than judgmental feelings, opinions and self-criticism. Secondly, common humanity vs. isolation, which is the ability to see one's different experiences not as isolated and personal but within a greater, human-experience context. Thirdly, mindfulness vs. overidentification, which encompasses the awareness of one's own painful

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thoughts and feelings and being able to hold them in balance without ignoring or over-identifying with them (Neff, 2003).

One can summarise then, having self-compassion means having the desire for an overall state of well-being for oneself which includes one's physical, emotional and psychological health. Here, it is important to understand that having a certain level of self-compassion does not mean feeling worthier than others. Instead, it involves individuals feeling equal to others and behaving in the same manner towards themselves as they would towards friends and loved ones. This is the main essence of self-compassion. As individuals tend to be harsher, more judgmental and insensitive towards themselves as relative to their surroundings, self-compassion helps one to behave more equitably towards oneself (Neff, 2003). Therefore, an increased desire to increase overall well-being aligns with increasing efforts to generate self-compassion.

As self-compassion is a concept with various facets, another definition highlights its qualities of productive and gentle self-reflection. As previously cited, one of the pioneers in the research of self-compassion is Paul Gilbert. Gilbert differs from Neff in defining self-compassion by concentrating on the absence of self-criticism and self-attacking. One of his *Compassion Mind Foundation's* most widely-used definition of self-compassion is: "a sensitivity to suffering in oneself and others with a commitment to try to alleviate and prevent it." (The Compassionate Mind Foundation, 2019). Moreover, he states that compassion is a strong personal declaration of strength and courage within humans, as it is "a universally recognised motivation with the ability to change the world and oneself". For him, self-compassion entails the possibility of gaining the necessary knowledge about oneself and others, and about the underlying causes of suffering, in order to then be able to address them (The Compassionate Mind Foundation, 2019). Taken as a whole, the characteristics of self-compassion that stand out the most are kindness and understanding towards oneself, and constructive self-development.

The main difference between these two definitions lies in their way of assessing self-compassion by approaching the concept from different directions. Gilbert's approach towards identifying the possible presence of self-compassion is to look at self-criticism (self-criticism, inadequate-self, hated self) and the possible presence of depression, anxiety, self-harm and distorted eating, and thereby for signs for psychopathologies (Kupeli, Chilcot, Schmidt, Campbell & Troop, 2012). In contrast, Neff has a different approach to self-compassion as it identifies self-kindness rather than self-criticism, common humanity rather than perceived

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isolation, and a mindful awareness of negative emotions rather than the denial or exaggeration of these emotions. With its three constructs Neff's approach therefore estimates the psychological health of an individual, not focusing on the identification of psychopathologies as Gilbert does (Kupeli, Chilcot, Schmidt, Campbell & Troop, 2012). Essentially, Gilbert's approach to identifying self-compassion lies in exploring possible ill-being, whereas Neff's aims to extract signs for well-being.

Given their different ways of approaching the construct, comparing both ways of identifying the degree of the presence of self-compassion is of great interest. It appears relevant to discover whether one of the two conceptualizations exceed the other in predicting self-compassion in relation to health behaviours, or whether they display equal predictability. To explore these directions, this paper will focus on three different health behaviours. More specifically it aims to discover how the health behaviours of stress management, physical activity, and eating behaviours associate to self-compassion.

Relationship between Stress Management, Physical Activity, Eating Habits and Self-compassion

The three health behaviours stress management, physical activity and eating have been chosen to be investigated in this study as positive eating habits and physical activity increase bodily well-being, whereas the capability of managing stress increases psychological well-being. As health behaviours aim at the protection and sustaining of health in general, the combination of these health behaviours can be carefully seen as representative as they cover various facets (Morrison & Bennett, 2016). With the aim of self-compassionate individuals to have an overall state of well-being, it appears sensible then to investigate how exactly self-compassion and these three health behaviours are associated to each other.

Health behaviours seem to be centred around a similar aspect of self-compassion, namely the drive towards the promotion of personal well-being and goodness towards oneself and one's body. Both concepts hold overall well-being at their core. For example, a study that looked at the relation of the two, self-compassion was associated with active intentions to engage in health promoting behaviours (Fuschia & Sirois, 2015). Intentions and engaging in health promoting behaviours is, however, quite general and no clear distinction between particular behaviours has

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been made, nor is it specified which health behaviours require more self-compassion compared to others.

Looking at the three health behaviours and previous research on their relation to self-compassion in an integrative manner, some general trends in terms of their association can be inferred. Generally speaking, a study has demonstrated that self-compassion particularly promotes the successful self-regulation of health-related behaviours. Especially during stressful life-events, the activation of positive coping strategies through directing resources at stress management was found to be enhanced in individuals with greater self-compassion (Sirois et al., 2015). During times of stress especially a decrease in overall well-being is common (Edwards & Rothbard, 1999). Sirois et al. (2015) suggested that high self-compassion is an essential factor for promoting the positive direction of resources towards self-regulation and thus health behaviours.

With regard to the health behaviour 'stress management', self-compassion might benefit positive self-regulation. It was found that self-compassion is positively associated with mastery goals and negatively associated with performance goals (Neff, Hsieh, & Dejitterat, 2004). This implies that the course of how things are managed, rather than the end result, is of greater importance with regard to the capacity of stress management and its relation to self-compassion.

Other studies, however, have shown that stress management requires mindfulness to a great extent, which is only one facet of self-compassion. Being mindfully aware brings about the disengagement of the goal pursuit and redirects energies towards alternative goals which in turn contributes to general well-being (Neely, Schallert, Mohammed, Roberts, & Chen, 2009). This study again illustrated that the presence of self-compassion accounted for a significant amount of variance in well-being but, as with other studies, did not specifically attribute this variance to the health behaviour of stress management. Being able to specify to what extent stress management is related to self-compassion would help to understand the possible variance it accounts for in individual's general well-being.

In contrast, Neely et al. (2009) found that stress management itself seems to be more dependent on physical health rather than on self-compassion. A study by Sirois and Homan (2017) suggests that self-compassion rather has an indirect positive effect on physical health and thus bodily well-being through promoting health behaviours in general. More precisely, they identified the level of perceived stress to influence a person's physical well-being. The presence

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of self-compassion through taking a kind, accepting, and mindful stance towards oneself was found to reduce stress by increasing stress management, thereby promoting physical health. Hence, heightened self-compassion appears to promote behaviours beneficial for health, thereby contributing to physical health and the capacity to manage stress.

Looking at physical activity as a health behaviour and its relation to self-compassion, ambivalent results were found. Self-compassion is capable to help buffer pain going along with physical activity, such as soreness, and enhances the general wish for physical movement (Sutherland et al., 2014). Looking after oneself in terms of adequate physical activity appears to be benefitted through high self-compassion on the one hand. On the other hand, Sutherland et al. (2014) also found that self-compassion could also lead to mediocrity as it could be used as an excuse to not engage in too much physical activity in the form of looking after oneself. It seems to differ across individuals and their preferences in relation to pleasure associated to movement. This ambivalent finding implies that more self-compassion within an individual would either decrease or increase physical activity rather than increasing it. Thus, clearly determining the association of self-compassion and physical activity appears essential.

Having found that neither physical activity nor stress management seem to be significantly sustained by their relatedness to self-compassion, how eating behaviours relate to self-compassion elicits interest. As self-compassionate individuals value well-being, the degree of self-compassion appears to hold an important role given that unhealthy eating behaviours have a large impact on mental and physical health (Dahlmann, Wille, Hoelling, Vloet, & Ravens-Seberer, 2009). Studies identified that eating behaviours change drastically depending on the personal life circumstances of individuals, with stressful life conditions especially eliciting over- or under eating (Wardle, 2006). The identification of factors enhancing healthy eating behaviours then is essential so physical health can be sustained, stress effectively managed, and well-being generated.

It has been shown that stress-management is influenced rather by the degree of physical health than self-compassion, whereas healthy or unhealthy nutrition in turn influences health. As self-compassion implies taking a kind and respectful attitude towards oneself, which then strengthens one's capacity to self-regulate, the question arises whether a regulated healthy dietary behaviour is influenced by the degree of self-compassion. A study by Ferreira, Pinto-Goveia and Duarte in 2013 found that self-compassion itself is negatively associated with eating

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disorder symptomatology's. This would imply that individuals with no self-compassion are more likely to exhibit unhealthy eating behaviours. However, the question if self-compassion therefore is positively associated with healthy eating behaviours remains unanswered until now.

While self-compassion has been found to increase health behaviours in general (Sirois et al., 2015), other studies have suggested that certain kinds of health behaviours might be more dependent on other factors. In light of this, it seems sensible to identify exactly which of these three health behaviours are influenced the most by self-compassion in order to know how these health behaviours can be sustained for their regular exhibition among individuals. Until now, no existing research has fully carried out investigation concerning these different influences which might determine health behaviours.

Research Outline

Inspecting the correlation between the two self-compassion measures will help to see if they are equal in predicting self-compassion.

Investigating the question of the degree to which self-compassion influences certain kinds of health behaviours would enable greater insight into the importance of self-compassion and its association towards all the existing forms of health behaviour which in turn lead to higher levels of physical health and hence to greater overall states of well-being.

Having a clearer knowledge of which types of health behaviour can be associated to self-compassion, would help to close an important research gap as it would aid many intervention designers, doctors and individuals to work in a more target-oriented way in ensuring better physical health within society.

RQ1: To what extent is the Self-Compassion Short-Form and the Forms of Self-Criticizing/Attacking and Self-Reassuring Scale correlated?

We expect a significant correlation between the two measurements as both are validated and frequently used scales in assessing the level of self-compassion among individuals.

RQ2: To what extent are the health behaviours 'eating', 'stress management' and 'physical activity' correlated to self-compassion?

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We await to see a significant correlation between eating and self-compassion and no significant correlation between stress management, physical activity and self-compassion.

RQ3: To what extent are physical health and self-compassion correlated?

We expect a significant correlation between physical health and self-compassion.

Methods

The following conducted study was approved by the BMS Ethics Committee (EC) of the University of Twente, BCE18211. Before participating participants gave their online informed consent.

Design

The study design involved a cross-sectional correlation descriptive questionnaire survey. The association between self-compassion, health behaviours and physical health was investigated with an online survey. Responses were collected over 12 days.

Participants & Procedure

Inclusion criteria were at least 18 years of age, as well as proficiency in English or German. Excluded from the sample were all participants that did not meet the requirements, as well as those who did not complete the questionnaire, and participants with immense outlying response rates. Participants were invited to voluntarily take part in the online questionnaire. Students from the University of Twente were recruited through the study portal Sona to participate in the study. Once successfully completed the questionnaire, participants received 0,75 Sona credits, a university credit system. The researchers additionally invited friends, family members and colleagues to take part in the study through the Qualtrics online survey portal. In total, data was collected for a period of 12 days, between the 28.04.2019 and the 09.05.2019. In total, six participants were gathered through the Sona Portal and 299 via the Qualtrics system.

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305 individuals started the questionnaire and 205 completed it. One participant was excluded due to outlying values.

Materials

The following study was part of a Bachelor component involving four different researchers. Therefore, materials of all researchers were combined in the form of one online questionnaire. The shared questionnaire entailed questions regarding the age, gender and nationality of the participants, and measurements for mental health, physical health, self-compassion and health behaviours. The present study utilized the measurements for self-compassion, physical health and health behaviours.

Self-Compassion. Self-compassion was measured through two different scales. The short form of the Self-Compassion Scale by Neff et al. (2011) was utilized and moreover the Forms of Self-Criticizing/Attacking and Self-Reassuring Scale (Gilbert et al., 2004).

The 12-item Self-Compassion Scale – Short Form by Neff et al. (2011) assessed self-compassion through measuring six components of its construct. The measured constructs are self-kindness (e.g. *‘When I am going through a very hard time, I give myself the caring and tenderness I need’*), self-judgment (e.g. *I am disapproving and judgmental about my own flaws and inadequacies*), common humanity (e.g. *I try to see my failings as part of the human condition*), isolation (e.g. *When I think about my indecencies it tends to make me feel more separate and cut off from the rest of the world*), mindfulness (e.g. *When something painful happens I try to take a balanced view of the situation*) and over-identification (e.g. *When I am feeling down I tend to obsess and fixate on everything that is wrong*).

Answers were given on a five-point Likert scale ranging from 1 (never) to 5 (always). The end score was calculated through the computation of the mean of the subscales item responses. Before averaging the scores, negatively formulated items had to be reverse-scored first. Higher scores indicated a higher level of self-compassion among participants. The reliability of the scale within the current study was good with Cronbach’s alpha at 0.83.

The 14-item Forms of Self-Criticizing/Attacking and Self-Reassuring Scale (FSCRS) determined forms of self-criticism and self-reassurance through a self-report questionnaire. In detail, it assessed how individuals relate to themselves in situations of failure (e.g. *I find it easy*

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to forgive myself) and loss of personal (e.g. *I call myself names*) and social status (e.g. *I encourage myself for the future*). A five-point Likert scale assessed the answer options from participants ranging from 1 (never) and 5 (always). Before calculating the overall score, negative formulated items had to be reverse-scored. The overall score was calculated by averaging up all scores. Higher end scores indicated a lower level of self-compassion. The reliability within this study of this scale was also good with Cronbach's alpha at 0.82.

Health Protective Behaviours. Health Behaviours were assessed with two measures. These measures were the Health Protective Behaviours Scale (HPBS; Ping et al., 2018) and the Wellness Behaviour Inventory (WBI; Sirois, 2001; 2019). The HPBS with its 32 items covered five different domains regarding health protective behaviours. These were; interpersonal support (*I take the doctor's advice*), general behaviour (*I use a seat belt while driving*), self-knowledge (*I maintain a steady weight*), nutrition behaviour (*I eat fruit everyday (250- 500gr.)*) and health care (*I do physical activity everyday (30 min or more)*). The HPBS was used to assess the correlation between self-compassion and no specific health behaviour, hence a general measure of health behaviours.

Each of the 32 statements were answered by choosing five different answer options. These ranged between never (1) and always (5). After recoding the negatively formulated items, the total score was computed by averaging the scores on all items. Higher scores indicated overall higher displayed health behaviours among participants. The reliability within this study of the HPBS lies with Cronbach's alpha at .60 which was sufficient.

The WBI was used for assessing the displayed frequency of certain health behaviours. These were eating (*I eat breakfast*), physical activity (*I exercise for 20 continuous or more minutes, to the point of perspiration, a day*) and stress management (*I take time to relax*). The scale consisted of 12 items with a five-point Likert response possibility ranging between 1 (less than once a week or never) to five (every day of the week). Before calculating the scores, negatively formulated items had to be reverse scored. A higher total score on the WBI displayed more health behaviours among the participants. The reliability within this study of the scale was sufficient with Cronbach's Alpha lying at .66.

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Physical Health. To investigate physical health among participants the Cohen-Hoberman Inventory of Physical Symptoms was administered (CHIPS; Cohen & Hoberman, 1983). The Cohen-Hoberman Inventory of Physical Symptoms assessed with 33 items the prevalence common physical symptoms within the past two weeks. An exemplary item was “Cold or cough”. Each item was answered through a five-point Likert scale. The answer options ranged from never (0) to always (4). The total score of the inventory was calculated by summing the scores across the 33 items. Higher scores indicated more physical symptoms and therefore a lower physical health. The reliability of the CHIPS within this study was classified as good with Cronbach’s Alpha lying at 0.81.

Data Analysis

The data set was investigated with SPSS 24. Data for all item scores were run first, to check for outliers or missing values. Then, negative formulated items were reversed scored and the descriptives of the sample were assessed.

Formerly, means, standard deviations and Cronbach’s Alpha were calculated to explore the data set and its representatives.

The first research questions was computed with Pearson correlation analysis to assess the degree of relatedness among the two used self-compassion measures.

For assessing the second research question, bivariate correlation analysis was completed for determining the level of relatedness between self-compassion and the three health behaviours eating, physical activity and stress management.

The third research question was measured as well through a bivariate correlation analysis for determining the extent of relatedness amid self-compassion and physical health.

Results

Outcomes and results of the study will be presented below. First, the general demographics of the sample will be given. Then, means, standard deviations and ranges of the assessed variables of the sample will be displayed. Lastly, the results of the bivariate correlation between the two self-compassion measures, the three different health behaviours and physical health will be conferred.

Demographic Statistics

Table 1 summarizes the demographic statistics of this study's sample. 204 participants were included in the analysis. The mean age was 38 (SD= 16.73) and the age distribution covered ages from 18 to 82 years. The sample consisted out of 70.1% females and 29.9 % males. Moreover, information regarding nationality was gathered and was found to be 1.5% Dutch, 93.1% German and 5.4% belonging other nationalities.

Table 1

Demographics statistics of the sample (N = 204).

Item	Category	Frequency	%
Sex	Male	61	29.9
	Female	143	70.1
Nationality	Dutch	3	1.5
	German	190	93.1
	Other	11	5.4
Age	18 – 25	92	45.1
	26 – 35	10	4.9
	36 – 45	10	4.9
	46 – 55	60	29.4
	56 – 82	32	15.7

Descriptive Statistics of Self-Compassion Measures, Physical Health and Health Behaviours

Table 2 summarizes the mean scores, standard deviations and the ranges of the sample on the assessed variables. The sample displayed an average to above medium level of self-compassion. This was shown by a sample score of 3.3 (SD=0.7) on Neff's self-compassion scale. Similarly, results of Gilbert's self-compassion scale displayed a moderate to above level of self-compassion within the sample, with a mean score of 2.0 (SD=0.5).

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For overall health behaviours, the mean of the sample was 3.5 (SD=0.4) which demonstrates the performance of moderate to high amounts of health behaviours within the sample. Looking at health behaviours in a more detailed manner, ‘eating’ behaviours were moderate to high among the sample, with a mean score of 3.7 (SD=0.4). The same applies for the presence of the health behaviour ‘physical activity’, which was also moderate to high within the sample. ‘Stress management’ measures demonstrated a moderate to high exhibition of this health behaviour among the sample, with 3.5 (SD=0.7).

Lastly, the measurement for physical health displayed a mean of 1.7 (SD=0.4) which indicates a high level of physical health among the sample. In general, descriptive results indicate that the total sample displayed (slightly than above) medium level of self-compassion, medium to high health behaviours, high physical health in terms of eating and physical activity and slightly lower (moderate to high) stress management abilities.

Table 2

Means, Standard Deviations, Ranges, minimum and maximum of sample on assessed variables (N= 204).

Measure	Sample Mean	SD	Range	min	max
SCS-SF*	3.3	0.7	1 - 5	1.4	4.8
FSCRS*	2.0	0.5	1 - 5	1.0	3.5
Physical Health	1.7	0.4	0 - 4	1.0	2.9
Health Behaviours	3.5	0.4	1 - 5	2.7	4.4
Eating	3.7	0.4	1 - 5	2.5	4.7
Physical Activity	3.7	0.7	1 - 5	1.0	5.0
Stress Management	3.5	0.7	1 - 5	1.5	5.0

*SCS-SF =Self-Compassion-Scale-Short-Form, FSCRS =Forms of Self-Criticizing/Attacking and Self-Reassuring Scale

Correlations

Table 3 displays correlations between the two self-compassion measures, between self-compassion and physical health, and between self-compassion and the three investigated health behaviours.

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For the first research question both self-compassion measures were correlated with each other. A strong negative significant association was found between them ($r(202) = -.74, p < .01$). This indicates their similarity in measuring the same theoretical construct.

In regard to the second research question, no significant association between both self-compassion measures and stress management was found ($r(202) = .06, p > .05, r(202) = -.08, p > .05$). Similarly, between physical activity and both self-compassions measures no significant association was discovered ($r(202) = .04, p > .05, r(202) = -.07, p > .05$). A significant association was identified between eating and the two self-compassion measures ($r(202) = .14, p < .05, r(202) = -.23, p < .01$). This infers that for the health behaviours stress management and physical activity no self-compassion is needed to be displayed. The health behaviour eating needs to be associated with self-compassion for being shown.

Analysis for the third research question displayed significant associations among both self-compassion measures and physical health ($r(202) = -.32, p < .01, r(202) = .39, p < .01$). Indicating that physical health can be associated to self-compassion.

Table 3

Bivariate correlations between all dependent variables (N= 204)

	Physical Health	Health Behaviours	Eating	Physical Activity	Stress Management
SCS-SF***	-.32**	.21**	.14*	.04	.06
FSCRS***	0.39**	-.26**	-.23**	-.07	-.08

* $p < .05$, ** $p < .01$, ***Bivariate correlation showed a significantly negative correlation between SCS-SF and FSCRS ($r = -.74, p < 0.01$)

SCS-SF =Self-Compassion-Scale-Short-Form, FSCRS =Forms of Self-Criticizing/Attacking and Self-Reassuring Scale

Discussion

The current study was conducted for contributing to the research canon concerning self-compassion and its relation to physical health and health behaviours. It was tested in how far the two different self-compassion measures are similar in predicting self-compassion. Special regard

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was paid to the relationship between self-compassion and eating behaviours, physical activity and stress management. The overall aim of this research was to discover whether the display of certain health behaviours was associated to the presence of self-compassion. More specifically, eating behaviour, stress management and physical activity were investigated thoroughly. Moreover, the relation between self-compassion and physical health in general was assessed.

This research demonstrated that the Self-Compassion Short-Form by Neff et al. (2011) and the Forms of Self-Criticizing/Attacking and Self-Reassuring Scale by Gilbert et al. (2004) measure both the same theoretical construct of self-compassion. Moreover, both scales had similar correlational values with the assessed health behaviours. This infers additionally their similarity in assessing self-compassion.

This finding is of value as no research before has shown this similarity. Research investigating self-compassion now do not need to decide between the measures as their similarity in measuring the same theoretical construct has been proven.

Results of this research showed that there is indeed a difference concerning the level of self-compassion when looking at the presence of healthy eating behaviours, physical activity and stress management. It was displayed that eating behaviours are associated with self-compassion. Whereas stress management and physical activity were not. Regarding the health behaviour eating, the results suggest that the greater the level of self-compassion, the healthier the eating behaviours among individuals are. This result can also be directly drawn to Neff's self-compassion definition as she states that a component of self-compassion is to take a kind attitude towards oneself (Neff, 2003). Hence, being kind to oneself means here to have healthy eating behaviours. Moreover, this finding is also in line with Gilbert's self-compassion definition as for him and his institution self-compassion means to have a sensitivity to the own suffering (The Compassionate Mind Foundation, 2019). This is especially interesting as dietary behaviours are often used as means and ways to control and/ or punish oneself (Fuhrmann & Kuhl, 1998). Therefore, if one is able to recognize that restricted or unhealthy eating behaviours come out of own suffering and with this having self-compassion towards oneself, the own eating behaviours are likely to become healthier.

This finding could be used for interventions, future research or personal growth possibilities in regard to healthy eating behaviours. Focusing more on self-compassion within the population who faces eating disorders. Meaning, that self-compassion exercises could be

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included in the treatment plan of eating disorder interventions. Especially, as it was found that eating behaviours have a large impact on mental and physical health (Dahlmann, Wille, Hoelling, Vloet & Ravens-Seberer, 2009)

The results regarding the relationship between stress management, physical activity and self-compassion showed no association among them. This does not appear to be fully in line with research conducted by Sirois et al. (2011). They did not identify specific health behaviours and their degree of relatedness to self-compassion but indicated that self-compassion itself promotes health behaviours in general. This study not necessarily contrast but specifies their results as it suggests that not all health behaviours are equally promoted by the presence of self-compassion, but rather that self-compassion is only associated with certain health behaviours. More specifically, this study showed that no associations exist between the health behaviours stress management, physical activity and self-compassion. Saying that for the sustainment of health behaviours it is important to differentiate between those associated with self-compassion and those which are not in order to tackle them individually. Hence, even though it can be stated that generally speaking, self-compassion promotes health behaviours one has to carefully differentiate between the individual behaviours.

Moreover, Terry and Leary (2011) stressed in their research that individuals with higher levels of self-compassion have greater capacities and abilities to deal with stressful life events and tend to demonstrate more self-regulatory resources. Here, the findings of this study contrast to the just mentioned results as stress management is not associated with self-compassion.

It can be concluded that even though health behaviours in general are associated with self-compassion it is possible to make a distinction among them. It is advisable for future research to concentrate on different kinds of health behaviours apart from those investigated within this research to further understand the underlying relations which enhance the promotion of all health behaviours.

The results of the third research question displayed a significant moderate association among self-compassion and physical health. This relationship was investigated for supporting already existing research. Until now, research mainly displayed that self-compassion has an indirect effect on physical health (Sirois & Homann, 2017). Hence, the results of this study are in line with the findings of already conducted research on this topic. The results of Sirois and Homann's study in 2017 describe the benefits of this indirect relation. As individuals tend to take

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a kind, accepting and mindful stance towards their own flaws which in turn reduces stress and promotes health behaviours which logically lead to a better physical health. Moreover, the results of this study underline the outcome of Terry's and Leary's research (2011). Their results suggest that self-compassionate individuals might cope better with stress events as they might be less depleted by illnesses and injuries and have greater self-regulatory resources to devote to self-care which result in a better physical health.

In conclusion it can be said that this research supports the outcomes of already conducted research and promotes the importance that should be given towards self-compassion in relation to physical health. Future research could lay more focus on the exact causal relations among self-compassion and physical health to understand it more efficiently and hence take the necessary steps for enhancing it.

Strengths and Limitations

There are several general strengths when looking at this research. Firstly, the sample consisted out of 204 participants which gave the possibility to collect a great amount of individual data. Secondly, the used sample is very representative as it entailed more than three different nationalities and the age range was very large, ranging between 18 and 82 years. However, the representativeness of the nationalities have to be looked at with some caution as it mainly consisted out of Germans and female participants.

There are additional strengths when looking at the results of this study. First of all, the results of this study are in agreement with other studies which investigated the connection among self-compassion and physical health. It is, however, still unclear which exact health behaviours that lead to physical health are influenced by self-compassion. Throughout this study it was made visible that eating is mostly associated with self-compassion in comparison to the other two analysed health behaviours.

Secondly, by showing with this study that self-compassion stands in association with physical health, as other studies already did, the importance and the positive influence that self-compassion is able to give towards an individual's general health becomes evident. Spreading the importance and usefulness of self-compassion through different mediums could help population's general well-being through an enhanced level of physical health.

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The strengths of this research could be even more supported by future research. As this study based its focus on three distinct health behaviours where only one of them showed to be explained partly by self-compassion. Further research could concentrate on different health behaviours in order to close this existing research gap. Moreover, further research could focus on the identification of other health behaviours within health behaviours scales. This, in turn, could lead to a greater insight into the relation between different health behaviours and self-compassion.

The first limitation of this research concerns the reliability and validity of the used subscales from the Wellness Behaviour Inventory. This could be due to the few items that each subscale entailed. One must keep this fact in mind whilst looking at the results, interpreting and generalizing them. It is therefore advisable to utilize a larger health behaviour measure for assuring the reliability and validity of the scale.

Secondly, this study used a self-report measure for collecting the data. This was limiting to the study itself as the researcher could not verify the level of seriousness among participants. This limitation could be inferred as the initial sample size consisted out of 305 participants from which 100 had to be excluded due to a non-finalized questionnaire. It would be desirable to collect the data in a controlled condition for supervising the seriousness of participants.

Conclusion

It can be concluded that although previous studies have suggested an association between self-compassion and health behaviours, this study showed that this association strongly depends upon the behaviours being studied. In addition, this study displayed that the two self-compassion measures of self-compassion, the SCS-SF and the FSCRS, strongly correlate with each other and showed similar correlation patterns with physical health and health behaviours.

Moreover, it can be stated that this study included enough participants in order for the results to be meaningful and generalizable.

For further research it would be advisable to use measures which are able to identify more than the three health behaviours assessed in this research. This will give a greater insight into the question which health behaviours are in need of self-compassion to be displayed.

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The found results of this study can be utilized on population's who face eating disorders and as a baseline for future research regarding this topic.

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