Bachelor Thesis

The role of gender in relation to self-compassion and accompanying health behaviours

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Table of content

Abstract

Self-compassion has been a growing focus of interest during the past years. It refers to being kind and open towards oneself, as well as to one´s feelings and needs (Neff, 2010). Therefore, it often comes along with the exhibition of certain health behaviours (Terry & Leary, 2011). Moreover, it was found that a lot of factors have an influence on the level of self-compassion as well as on the level of health behaviours that someone exhibits. One factor that is often considered is gender (Bothmer & Fridlund, 2005). However, there are a lot of conflicting results in relation to gender differences, which might be based on the fact that the reviewed studies were predominantly conducted in restricted samples. Moreover, it was not studied so far whether gender might have a moderating effect on the relationship between self-compassion and health behaviour. Therefore, this study examines whether there are differences between males and females with regard to self-compassion and health behaviours, as well as whether the relationship between self-compassion and health behaviours is moderated by gender. In order to reach a broad sample, participants were randomly collected by means of convenience sampling. A total of 220 participants filled out the questionnaire and it was conducted an ANOVA one-way analysis and a logistic regression path analysis afterwards. The results showed that there is a significant difference between males and females in relation to health behaviours (p =.03), showing that females exhibit a slightly higher level of health behaviours than men. However, there were no differences between males and females in relation to self-compassion (p =.12) and gender did not moderate the relationship between self-compassion and health behaviours. Hence, the results underline the importance of gender when it comes to health behaviours, since they are in line with already executed researches. However, it did not reveal significant findings with regard to self-compassion and to gender as a moderator. Therefore, it is suggested to conduct further research with a sample that includes a higher number of male participants. In addition, it should be referred to the long version of the self-compassion scale from Neff, since this version might represent a higher reliability with regard to certain subscales.

Keywords: self-compassion, gender, health behaviour

Introduction

Upon a gradually changing and developing world, a considerable amount of people is facing structural changes and an increasingly demanding society, which includes for instance academic as well as social pressures (Watkins, Hunt, & Eisenberg, 2012). Hence, it is important to adapt to these changes in order to cope with them in an appropriate way and thus to prevent feelings of guilt and failure (Bedford & Hwang, 2003). Since a person´s coping capabilities and resources play a huge role in relation to that adaptation and consequently to one´s well-being, there originated a growing interest in recent years. More precisely, there is a growing body of research with regards to the concept of self-compassion and accompanying health behaviours, that might have an influence on a person´s physical and mental well-being (Bellier-Teichmann, Golay, & Pomini, 2018). Hence, evidence shows that self-compassion often comes along with a healthy lifestyle, which includes self-regulated health behaviours and the promotion of one´s well-being (Terry & Leary, 2011). In addition, there is a lot of research in relation to different factors that might have an influence on self-compassion and health behaviours. In these studies, it was found that gender might have a significant influence on the level of self-compassion, as well on the level of exhibited health behaviours, which means that females might show a higher level of health behaviour and males show a higher level of self-compassion (Neff, 2003; Bothmer & Fridlund, 2005). In the following section, the concept of self-compassion will be described in more detail. Thereafter, health behaviours as well as their importance will be elaborated and lastly, the role of gender will be investigated.

Self-compassion

Taking a closer look at the concept of self-compassion, it describes one part of the broader term “compassion”, which means being open to other´s feelings and their suffering and being non-judgmental. Furthermore, it also shows understanding and empathy with regards to the feelings of others. In contrast, self-compassion describes the same openness, however it is directed towards one´s own feelings and thoughts rather than towards others. To be more specific, it points out the acceptance of failure and understanding of one´s emotions, as well as trying to recover by being kind to oneself (Neff, 2010). According to Neff (2003), self-compassion is divided into three concepts, which especially emerge when someone is facing

experiences of failure or stressful events. These concepts are called *self-kindness, common humanity* and *mindfulness*. As already mentioned, *self-kindness* describes the understanding and acceptance of one´s own feelings and failures as well as being kind to oneself instead of being roughly overcritical, whereas the opposite of self-kindness is self-judgement. *Common humanity* means that one experiences failure or stressful events as a common human experience, rather than as an isolated event. Lastly, *mindfulness* includes regarding negative feelings and experiences in a balanced manner, which entails that one should be open and non-judgemental to one´s own emotions (Neff, 2003). Therefore, the concept of self-compassion refers to ways of treating oneself in a kind and protecting manner.

Self-compassion in relation to health behaviour

According to Blaxter (2003), it is generally known that the way of living is closely related to someone´s health and well-being. As already mentioned above, self-compassion represents an important predictor when it comes to self-regulated health behaviours as well as a healthy lifestyle in general and the promotion of one´s well-being (Terry & Leary, 2011). Since a healthy lifestyle is relatively easy to measure in terms of voluntary and self-regulated actions, it is often measured by means of investigating the diet and the level of exercising, as well as the consumption of nicotine and alcohol (Blaxter, 2003). Nevertheless, it also refers to a mindful and caring way of treating oneself. Horan & Taylo (2017) investigated the relationship of self-compassion and health behaviours in university employees and found that interventions which are targeted at self-compassion, lead to an improvement in the exhibition of health behaviours. This indicates that employees who show a higher level of self-compassion exhibit more health behaviours in their daily routine, which especially refers to mindfulness exercises and a decrease of high fat nutrition. Moreover, Gedik (2019) indicated a positive relationship between the level of self-compassion and accompanying health behaviours in college students. Going into detail, especially self-kindness, mindfulness, and self-judgment were significant predictors of health promoting behaviours, including 'health responsibility', 'physical activity', 'nutrition', 'spiritual growth', ´interpersonal relations´, and 'stress management' (Gedik, 2019). In addition, Schoenefeld and Webb (2013) discovered that people with a high level of self-compassion engaged in healthier eating habits than people with a low level of self-compassion. Hence, people with a high level of self-compassion

consume for example a great amount of fruits and vegetables and additionally have a balanced nutrition, whereas people who have a low level of self-compassion consume more high fat and high sugar products (Povey, Conner, Sparks, James, & Shepherd, 1998). Besides looking at healthy eating pattern, people with a higher level of self-compassion are doing exercises more often, which refers to physical training within one´s free time (Snell & Johnson, 1997; Schoenefeld & Webb, 2013). Based on the aforementioned literature, it becomes apparent that the level of self-compassion represents an important predictor when it comes to lifestyle habits and health behaviours.

Gender differences

As previously mentioned, there can be huge variations concerning the level of self-compassion, as well as regarding exhibited health behaviours. These differences may depend on several factors. Taking a closer look at existing studies, gender represents an important aspect that has to be considered when it comes to differences in relation to self-compassion and health behaviours (Neff, 2003; Bothmer & Fridlund, 2005). However, it can also be seen that there are a lot of conflicting results in relation to these differences. In the following section, the influence of gender in relation to the level of self-compassion will be investigated. Thereafter, studies in relation to male and female's health behaviours will be presented.

Since women are often said to be more understanding and open for feelings, one would expect a higher level of self-compassion in women (Mestre, Samper, Frías, & Tur, 2013). On the other side, they are often more critical and harsher with regard to their own performance, which consequently leads to an increasement of stress (Baião, Gilbert, McEwan, & Carvalho, 2015). This high level of stress in turn would reveal a lower level of self-compassion for women (Eriksson, Germundsjö, Åström, & Rönnlund, 2018). In her study, Neff (2003) found that women scored significantly lower on self-compassion than men. In particular, women showed higher levels on self-judgement, isolation and over-identification and lower levels on mindfulness. Contrariwise, it was further discovered that women have higher levels of compassion for humanity, empathetic concern, perspective taking, and forgiveness than men, which might indicate higher scores on self-compassion (Neff & Pommier, 2013). In addition, Spence and Helmreich (1978) indicate that women have higher scores on compassion than men.

When looking at lifestyle habits and general health behaviour, there are certain gender differences as well. According to Bothmer and Fridlund (2005) these differences already emerge when it comes to the motivation to live healthily. Women show more interest in relation to health promoting activities and they practice more health activities. Moreover, they are more willingly to change their dietary habits, to exercise regularly and to execute relaxation exercises (Bothmer & Fridlund, 2005). According to Kiefer, Rathmanner and Kunze (2003) women are more aware of a healthy diet and eat more vegetables, fruits and cereals than men, whereas men eat less healthy, for example by consuming more red meat, sausages, eggs and alcohol. Contrariwise, Deshpande, Basil and Basil (2009) state that women eat more adipose food, whilst the consumption of fruits and vegetables is the same for men and women. In addition, it was found that men are doing exercises more regularly and more often than women, whereas Bothmer and Fridlund (2005) state that women show a higher level of physical activity in order to stay healthy.

Overall, it becomes apparent based on existing literature that there is no consistent indication with regards to the relationship between gender differences, self-compassion and accompanying health behaviours. This might be based on the fact that most of the researches were conducted in restricted samples, such as among college students or employees. However, it can be seen that gender plays an important role when it comes to differences in the level of self-compassion as well as in relation to interests and habits with regard to health behaviour. Moreover, the level of self-compassion might influence the level of health behaviours, which indicates that someone who shows more self-compassion, likewise exhibits more health behaviours. Nevertheless, it cannot be assessed whether gender has an influence on the relationship between self-compassion and relating health behaviours.

The present study

As mentioned above, most of the reviewed researches were conducted in restricted populations, such as among college students or people that practice a certain religion. Thus, it would be of particular interest to conduct further research within another sample. This refers to research including a broader sample, which is more representative of the general public. Hence, it would be possible to draw inferences to a wider range within the population and to get more information about gender differences in relation to the level of self-

compassion, as well as health behaviour. In the present study, it will be assessed whether female and male participants exhibit a different level of self-compassion as well as a different level of health behaviours. In addition, it will be tested whether males and females exhibit a different level of health behaviours which is in turn based on their level of self-compassion. Hence, it is proposed a moderation model, whereby self-compassion has a direct influence on health behaviours which is in turn moderated by gender. Thereby, the research questions are stated as follows:

Research question 1: Are there any differences between males and females with regard to self-compassion?

Research question 2: Are there any differences between males and females with regard to health behaviour?

Research question 3: Is the relationship between self-compassion and health behaviours moderated by gender?

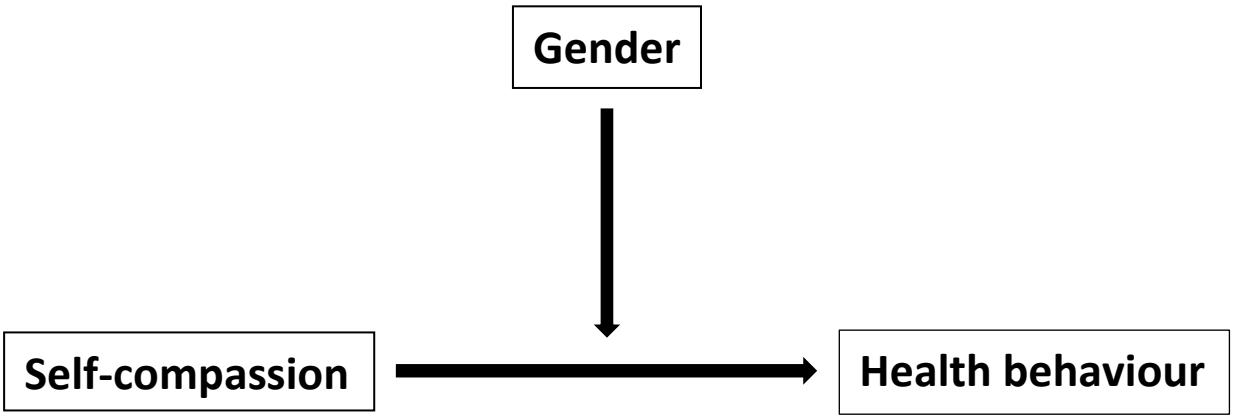


Figure 1. conceptual model of the relation between self-compassion and health behaviour, which is moderated by gender (RQ3).

Methods

Design

The design of the study was a cross-sectional study with online self-report questionnaires. Participants were randomly selected by means of convenience sampling.

Participants and procedure

Participants had to meet certain criteria in order to take part in the study, which included that they are proficient in speaking the German or the English language and that they are 18 years of age or older. Moreover, we used the student platform SONA which allowed students from the University of Twente to take part in the survey. Since each student is assigned to earn a certain amount of credits during their Bachelor, participants got credits for the participation in this survey as well. Moreover, each researcher made distributions by recruitment in their personal network since the goal was to get as much participants as possible. Thus, the sample included a great amount of family members and friends of the researchers, who partly transferred the questionnaire in their own network as well. A total of 305 participants started the online questionnaire. However, only 220 finished the required questionnaires and were thus eligible for the use of the present study (M age= 38.63; SD age=16.82; 69.5% female, 30.5% male).

The study was ethically approved by the Ethics committee at the Faculty of Behaviour, Management and Social sciences. The participants were introduced to the questionnaire by providing an invitation letter as well as an informed consent. Within the information letter, the participant was welcomed and the goal of the study as well as the definition of self-compassion were briefly described. Within the informed consent, the participants confirmed that they have read the introductory information and that they answer each question truthfully and at their best, as well as that they know that the data is completely anonymous. In addition, they declared that they knew about their right to withdraw from the study at any given time and that they participated voluntarily based on their own free will. After signing the informed consent, the questionnaire could be filled out, which took about 15 to 20 minutes. Since the researchers distributed the questionnaires not only on SONA, but also within their personal surrounding, which primarily consisted of German participants, all

questionnaires were used in an English version as well as in a German version. Participants could specify their e-mail address, so that they receive information about the results of the study.

Materials

Since the study was part of a Bachelor component at the University of Twente, a group of researchers was sharing one questionnaire. Based on that, the whole survey consisted of six instruments, measuring self-compassion and health behaviours, as well as mental health and physical symptoms. The present study only uses two of these scales, which includes the short form of the Self-compassion scale by Neff and the Wellness behaviours inventory scale (WBI) by Sirois. In addition, the questionnaire includes variables regarding the demographics of the participants. In the following section, the variables that were used for this study will be elaborated in more detail.

Demographics. Before filling out the questionnaires, the participants had to give information about their demographics. That refers to age, gender, nationality, and their current level of education. Hence, the participants were able to select "German", "Dutch", or "Other" as an answering option for nationality. Regarding their educational level, the questionnaire provided seven answering options, ranging from "less than a high school diploma" to "doctorate degree".

Self-compassion. In order to assess the level of self-compassion, the short form of the Self-Compassion Scale by Neff (SCS-SF; Neff, 2011) was used. The measure consists of 12 items and represents a widely used tool measuring overall self-compassion by means of measuring six subscales of self-compassion. These subscales measure how often people respond kindly to themselves in case of failure, by means of Self-Kindness (e.g., "I try to be loving toward myself when I'm feeling emotional pain"), Self-Judgment (e.g., "I'm 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 inadequacies 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 Overidentification (e.g., "When I'm feeling down I tend to obsess and fixate on everything

that's wrong"). Participants were instructed to indicate on a 5-point- Likert scale how often they behave in a certain manner on a scale from 1 (never) to 5 (always), whereby higher scores on the scale indicate a higher level of self-compassion. In order to get a mean scale score, the first step was to reverse the negative scored items, which included the variables of self-judgement, isolation, and over-identification. Thereafter, it was calculated the mean of each subscale. To get an overall score of the scale, the means of each subscales were computed to a grand mean.

Since the reliability scores on some of the subscales were predominantly relatively low (self-kindness: $\alpha = .45$; self-judgement: $\alpha = .77$; common humanity: $\alpha = .43$; isolation: $\alpha = .68$; mindfulness: $\alpha = .55$; over-identification: $\alpha = .56$) only the overall score of self-compassion was used for this study. Cronbach´s alpha for the overall score of the scale showed a good reliability ($\alpha = .80$).

Health behaviour. The Wellness behaviours inventory scale by Sirois (WBI; Sirois, 2001; 2019) was used in order to assess how often certain health behaviours were performed. These health behaviours refer to preventive health behaviours, including for example healthy eating (e.g. items such as "I eat breakfast") and doing exercises (e.g." I exercise for 20 continuous minutes or more, to the point of perspiration"). The scale consists of 12 items. The items are scored on a 5-point Likert scale with responses ranging from 1 (less than once a week or never) to 5 (every day of the week), whereby higher WBI scores indicate more health promoting behaviours. Since item 3 and 10 are negatively coded, they were reversed before calculating a mean scale score. Cronbach´s alpha for the scale in this study was found to be .66, which can still be considered as acceptable.

Data analysis

The data was analysed with SPSS 24. Before starting the analysis of the gathered data, a screening was conducted in order to check whether some participants must be excluded. That refers to participants who did not complete every scale or left some items out. Accordingly, 85 participants had to be excluded.

After examining the descriptive statistics of the variables in this study, an ANOVA one-way analysis was computed to test whether there are significant differences between males

and females with regard to self-compassion and health behaviours, as well as with regard to their demographics.

In order to test whether gender moderates the relationship between self-compassion and health behaviours, a moderator analysis was conducted by means of using the software Process for SPSS (Hayes, 2019). This software was used in order to conduct a logistic regression path analysis. Thus, it was determined whether the relationship between the continuous dependent variable (health behaviour) and the continuous independent variable (self-compassion) is moderated by gender.

Results

As can be seen in table 1, the sample shows a great diversity in relation to different aspects of demographics. One of these aspects is gender, which shows that the sample predominantly consisted of female participants. Moreover, most of the participants are German. The participants were aged between 18 and 82, which means that both young people as well as elderly participated. The mean age was 39. Based on this diversity in relation to age, the participants showed a great diversity with regard to their educational level as well. Hence, only 16.8 % attained less than a high school diploma, whereas almost 50% of the sample had a high school diploma. Moreover, it can be seen that the participants who have chosen “less than a high school diploma” consisted predominantly of men. In addition, only 1.5% of male participants have a doctorate degree, whereas women with a doctorate degree account for almost 6%. Hence, it can be seen that female participants are slightly more educated then men. However, this difference is very small. Overall, the sample shows a great diversity in relation to age and educational level, however it still includes predominantly higher educated participants.

Table 1

Demographics of the participants in the study (N=220)

		Men (n=67) n (30,5%)	Women (n=153) n (69,5%)	Total (n=220) N (100%)	*p*
Age (mean, SD)	Dutch	40.03 (16.82)	38.01 (16.83)	38.63 (16.82)	.41
Nationality	German	0 (00.0%)	3 (2.0%)	3 (1.4%)	.60
	Other	64 (95.5%)	142 (92.8%)	206 (93.6%)	
	European country	3 (4.5%)	8 (5.2%)	11 (5.0%)	
Current level of education	Less than a high school diploma	15 (22.4%)	22 (14.4%)	37 (16.8%)	.69
	High school graduate, diploma or the equivalent	26 (38.8%)	77 (55.3%)	103 (46.8%)	
	Bachelor's degree (e.g. BA, BS)	8 (11.9%)	17 (11.1%)	25 (11.4%)	
	Master's degree (e.g. MA, MS, MEd)	7 (10.4%)	16 (10.5%)	23 (10.5%)	
	Doctorate degree (e.g. PhD, EdD)	1 (1.5%)	9 (5.9%)	10 (4.5%)	
	Others	10 (14.9%)	12 (7.8%)	22 (10.0%)	

Note. Differences between groups were tested with one-way ANOVA. The mean difference is significant at the .05 level

From table 2 it can be seen that males and females did not differ to a great extend in relation to their level of self-compassion. However, males show a slightly higher level of self-compassion than females. Moreover, the sample shows an average level of exhibited health behaviours. According to the results from the ANOVA analysis, there are significant differences between males and females with regard to health behaviours, which means that females show a slightly higher score on health behaviours than men.

Table 2

Mean scores on self-compassion and health behaviours in total and divided by gender (N=220)

	Female (m, SD)	Male (m, SD)	Total (m, SD)	*p*
Self-compassion	3.2 (0.7)	3.4 (0.7)	3.3 (0.7)	.12
Health behaviour	3.5 (0.4)	3.4 (0.5)	3.5 (0.5)	.025

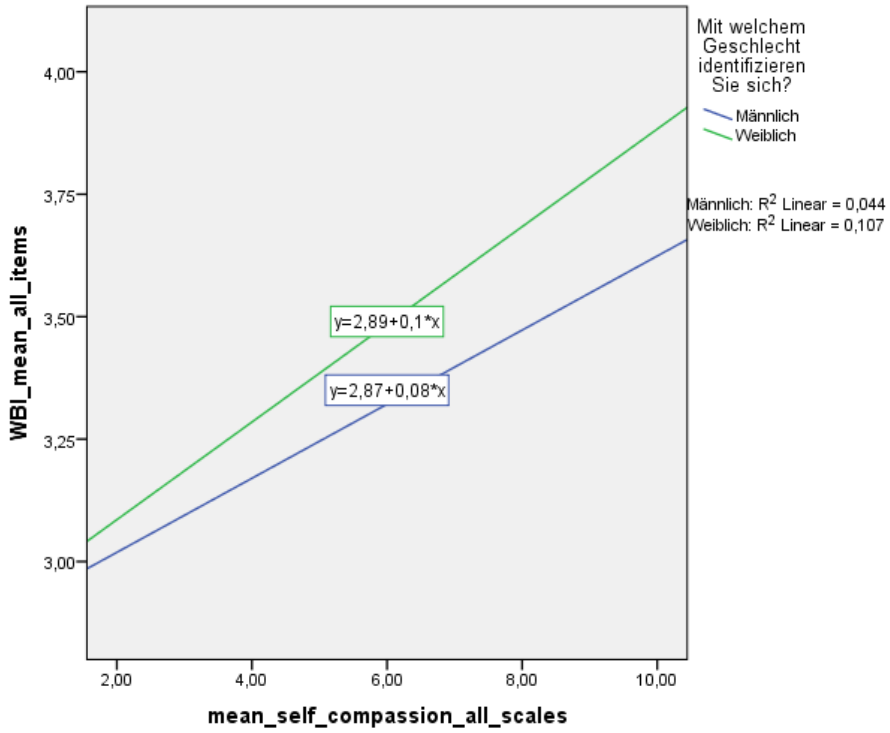
Note. Differences between groups were tested with one-way ANOVA. The mean difference is significant at the .05 level

To test the research question whether gender moderates the relationship between self-compassion and health behaviour, a logistic regression path analysis was conducted. This analysis revealed no significant results for the moderating effect of gender: interaction b = .03, $t(216)$ = .59, p = *.61.* The overall model equation is $F(3,216)=8,68$, $p \leq .001$*,* R^2 = .11, which indicates that gender has a very small influence on the relationship between self-compassion and health behaviour. Figure 2 represents the effect of gender on the relationship between self-compassion and health behaviours. This graphic shows that the relationship between self-compassion and health behaviours is slightly stronger for females than for males.

Table 3

Linear model of predictors of health behaviour (N = 220)

Items	b	*SE* B	*t*	*p*
Self-compassion	.0515	.0849	.6073	.5443
Gender	.0186	.3218	.0577	.9541
Interaction (self-compassion x gender)	.0241	.0473	.5089	.6133



*weiblich=female
**männlich= male
***Mit welchem Geschlecht identifizieren Sie sich?= What gender do you identify with?

Figure 2. scatterplot showing the relationship between self-compassion and health behaviours for males and females.

Discussion

The purpose of this study was to investigate the role of gender in relation to three research questions. The first one was whether there are any differences between males and females with regard to self-compassion and the second question investigated gender differences in relation to health behaviours. Lastly, it was tested whether gender had a moderating effect on the relationship between self-compassion and health behaviours.

This study shows that there are no considerable differences between males and females in relation to their level of self-compassion. Hence, both males as well as females showed a relatively high level of self-compassion, which means that they might treat themselves in an open and understanding way. Since existing literature in relation to gender differences and self-compassion shows conflicting results, this study does not reveal any significant findings with regard to different levels of self-compassion. However, there might be differences between males and females in relation to different aspects of self-compassion. According to Neff (2003), it was found that women scored significantly lower in relation to some aspects of self-compassion than men. Hence, women showed a higher level of self-judgement, isolation and over-identification as well as a lower level of mindfulness. Since this study only investigated differences in relation to an overall score of self-compassion, it was not possible to see whether they showed differences with regard to specific aspects of self-compassion. Therefore, further research needs to be conducted, which should include reliable subscales measuring certain aspects of self-compassion. Hence, it is suggested to use the long version of the self-compassion scale by Neff instead of the short form. Since this version incorporates more items for each subscale, it might show a higher reliability (Neff, 2019). Thus, it would be possible to make reliable comparing's between male and female participants and their level of self-compassion.

Further, females reported significantly more health behaviours than men. Although this difference was very small, this result is in line with several researches. In particular, that refers to findings from Bothmer and Fridlund (2005), who state that women show more motivation in relation to a healthy lifestyle and health promoting activities, as well as that they exhibit more physical activity than men. Moreover, it underlines results from Kiefer, Rathmanner and Kunze (2003), who investigated that women eat more fruits, vegetables and cereals than men. Hence, they are more aware of a healthy diet and show more willingness to

change their habits in order to stay healthy. Although the difference in the current sample was very small, it seems to fit to existing literature. However, the sample predominantly consisted of women. Therefore, a larger number of male participants should be involved in further studies in order to make a reliable comparing.

Lastly, the results show that gender does not have a moderating effect on the relationship between self-compassion and health behaviours. Since this study has been the first research which tests whether gender moderates the relationship between self-compassion and health behaviours, it is not possible to make comparing's with former studies. Therefore, this result did not reveal any significant findings with regard to a moderating role of gender. As already elaborated above, there is a large body of research that shows contradicting outcomes in relation to the role of gender, which might represent an explanation for the findings at hand. Hence, it is difficult to assess the role of gender regarding the interplay between self-compassion and health behaviour, which highlights the need for further research in this field. However, further research needs to be adapted in some respects.

This study provides ideas and recommendations for further researches. As mentioned above, that primarily refers to a higher number of male participants in order to make reliable comparing's between male and female participants. Moreover, the study should include the long version of the self-compassion scale by Neff instead of the short version. Since this version represents a higher reliability with regard to specific subscales, it would be possible to make comparing's in relation to specific subparts of self-compassion (Neff, 2019). Since this research did not reveal significant findings regarding a moderating role of gender, an analysis of confounding variables should be conducted. Based on that analysis, it would be possible to see whether external factors, such as for example income, might have an impact on the effect of gender and the relationship between self-compassion and health behaviours. Thereafter, it would be possible to include these factors as variables in the analysis. In addition, it should be conducted qualitative research in a further study. Hence, more information can be collected that relate to factors which might have an influence on the result and about the impact of gender on different aspects of self-compassion as well as health behaviours.

Strengths and Limitations

In order to evaluate the study in a proper way, it is crucial to be aware of certain strengths and limitations.

The strengths of this study are mainly based on the use of validated scales, which refers to the self-compassion scale by Neff (SCS-SF; Neff, 2011), as well as the Wellness behaviours inventory (WBI; Sirois, 2001; 2019). Hence, both scales measure a reliable construct. In addition, more than two hundred people participated in this study. These participants showed a great diversity regarding age and education. Therefore, the study involves a quite large sample and it was possible to collect a great amount of individual and widespread information.

Nevertheless, the study shows certain limitations as well. One of these limitations is, that one cannot be completely sure about the honesty of the participants, which might refer to social desirability. Furthermore, the survey was an online investigation and it is thus not possible to control the process of filling in the questionnaire. Hence, participants might have been interrupted or otherwise distracted while filling in the questionnaire. As already mentioned above, it was not possible to work with subscales from the self-compassion scale by Neff, since these did not show a good reliability. Hence, it is not possible to draw inferences to specific aspects of self-compassion.

Conclusion

Overall, the present study did not reveal significant findings in relation to gender differences. However, it underlines the importance of gender when it comes to health behaviours, whereas women show a slightly higher level of exhibited health behaviours. The study did not reveal any significant findings with regard to self-compassion and a moderating role of gender. Therefore, it is suggested to conduct further research which involves a greater number of male participants as well as to use the long version of the self-compassion scale by Neff instead of the short version.

References

Baião, R., Gilbert, P., McEwan, K., & Carvalho, S. (2015). Forms of self-criticising/attacking & self-reassuring scale: Psychometric properties and normative study. *Psychology and Psychotherapy: Theory, Research and Practice*, *88*(4), 438-452.

Bedford, O., & Hwang, K. K. (2003). Guilt and shame in Chinese culture: A cross-cultural framework from the perspective of morality and identity. *Journal for the Theory of Social Behaviour*, *33*(2), 127-144.

Bellier-Teichmann, T., Golay, P., & Pomini, V. (2018). Which are your resources and how do they contribute to your recovery?. *Revue Européenne de Psychologie Appliquée*, *68*(6), 215-226.

Blaxter, M. (2003). *Health and lifestyles*. Routledge.

Compassion Scales | Kristin Neff. (2019). Retrieved from https://self-compassion.org/self-compassion-scales-for-researchers/

Craig, C. L., Marshall, A. L., Sjöström, M., Bauman, A. E., Booth, M. L., Ainsworth, B. E., ... & Oja, P. (2003). International physical activity questionnaire: 12-country reliability and validity. *Medicine & science in sports & exercise*, *35*(8), 1381-1395.

Deshpande, S., Basil, M. D., & Basil, D. Z. (2009). Factors influencing healthy eating habits among college students: An application of the health belief model. *Health marketing quarterly*, *26*(2), 145-164.

Douglass, K. Y. (2003). Gender, lifestyle and social adjustment: Differences in mood disorders.

Eriksson, T., Germundsjö, L., Åström, E., & Rönnlund, M. (2018). Mindful Self-Compassion Training Reduces Stress and Burnout Symptoms Among Practicing Psychologists: A Randomized Controlled Trial of a Brief Web-Based Intervention. *Frontiers in Psychology, 9*. doi:10.3389/fpsyg.2018.02340

Gedik, Z. (2019). Self-compassion and health-promoting lifestyle behaviors in college students. *Psychology, health & medicine*, *24*(1), 108-114.

Horan, K. A., & Taylor, M. B. (2018). Mindfulness and self-compassion as tools in health behavior change: An evaluation of a workplace intervention pilot study. *Journal of Contextual Behavioral Science*, *8*, 8-16.

Kiefer, I., Rathmanner, T., & Kunze, M. (2005). Eating and dieting differences in men and women. *Journal of Men's Health and Gender*, *2*(2), 194-201.

Mestre, M. V., Samper, P., Frías, M. D., & Tur, A. M. (2009). Are women more empathetic than men? A longitudinal study in adolescence. *The Spanish journal of psychology*, *12*(1), 76-83.

Neff, K. D., & Pommier, E. (2013). The relationship between self-compassion and other-focused concern among college undergraduates, community adults, and practicing meditators. *Self and Identity*, *12*(2), 160-176.

Neff, K. D. (2003). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and identity*, *2*(2), 85-101.

Neff, K. D. (2015). The Self-Compassion Scale is a Valid and Theoretically Coherent Measure of Self-Compassion. *Mindfulness, 7*(1), 264-274. doi:10.1007/s12671-015-0479-3

Povey, R., Conner, M., Sparks, P., James, R., & Shepherd, R. (1998). Interpretations of healthy and unhealthy eating, and implications for dietary change. *Health Education Research*, *13*(2), 171-183.

PROCESS macro for SPSS and SAS. (n.d.). Retrieved from http://processmacro.org/index.html

Schoenefeld, S. J., & Webb, J. B. (2013). Self-compassion and intuitive eating in college women: Examining the contributions of distress tolerance and body image acceptance and action. *Eating Behaviors*, *14*(4), 493-496.

Sirois, F. M., Kitner, R., & Hirsch, J. K. (2015). Self-compassion, affect, and health behaviors. *Health Psychology, 34*, 661-669. doi:https://doi.org/10.1037/hea0000158

Sirois, F. M. (2001; 2019). The Wellness Behaviors Inventory. *Unpublished manual*. *Psychology*. *University of Sheffield, UK*

Snell, W. E., & Johnson, G. (1997). The multidimensional health questionnaire. *American Journal of Health Behaviour, 21,* 33-42.

Spence, Janet T. and Robert L. Helmreich. 1978. *Masculinity and Femininity: Their Psychological Dimensions, Correlates and Antecedents.* Austin, TX: University of Texas Press.

Sun, X., Chan, D. W., & Chan, L. K. (2016). Self-compassion and psychological well-being among adolescents in Hong Kong: Exploring gender differences. *Personality and Individual Differences*, *101*, 288-292.

Terry, M. L., & Leary, M. R. (2011). Self-compassion, self-regulation, and health. *Self and Identity*, *10*(3), 352-362.

Von Bothmer, M. I., & Fridlund, B. (2005). Gender differences in health habits and in

motivation for a healthy lifestyle among Swedish university students. *Nursing & health sciences*, *7*(2), 107-118.

Watkins, D. C., Hunt, J. B., & Eisenberg, D. (2012). Increased demand for mental health services on college campuses: Perspectives from administrators. *Qualitative Social Work*, *11*(3), 319-337.

Appendices

Appendix A

Invitation letter:

Welcome!

You are being invited to participate in a research study about self-compassion and health behaviors. This study is being conducted by Marlene Dahm, Sophia Bauhuf, Hannah Honsel and Maja Kalkofen from the Faculty of Behavioural, Management and Social Sciences at the University of Twente.

Self-compassion has been the focus of much research conducted over the last years. It can briefly be described as the skill to encounter difficult situations or failure with understanding and kindness for oneself. The purpose of this research study is to gain more insights into the relationship between self-compassion and various health behaviors and it will take you approximately 15 minutes to complete. The data will be used for research purposes by the aforementioned researchers, as well as the supervising staff of Dr. C.H.C. Drossaert and Dr. N. Köhle.

Your participation in this study is entirely voluntary and you can withdraw at any time. You are free to omit any questions by contacting any of the below provided e-mail addresses.

We believe there are no known risks associated with this research study; however, as with any online related activity the risk of a breach is always possible. To the best of our ability your answers in this study will remain confidential.

Thank you for your participation,

Maja Kalkofen (m.kalkofen@student.utwente.nl)

Sophia Bauhuf (s.bauhuf@student.utwente.nl)

Hannah Honsel (h.honsel@student.utwente.nl)

Marlene Dahm (a.m.dahm@student.utwente.nl)

Appendix B

Informed consent

Self-compassion has been the focus of much research conducted over the last years. It can briefly be described as the skill to encounter difficult situations or failure with understanding and kindness for oneself. This current study focuses on the connection of self-compassion with different health behaviors. Researchers and supervising staff will be able to see all answers, however only after the responses are anonymized. The content will be used for analysis and/or scientific publications/presentations.

It is important to mention that there will be no wrong answers. The researchers are interested in the concept of self-compassion and its connection to various health behaviors. Therefore, we encourage you to answer the questions truthfully.

'I hereby declare that I have been informed in a manner which is clear to me about the nature and method of the research as described in the introduction. My questions have been answered to my satisfaction. I agree of my own free will to participate in this research. I reserve the right to withdraw this consent without the need to give any reason and I am aware that I may withdraw from the experiment at any time. If my research results are to be used in scientific publications or made public in any other manner, then they will be made completely anonymous and my information will be kept confidential. If I request further information about the research, now or in the future, I may contact Maja Kalkofen (m.kalkofen@student.utwente.nl)'

By clicking the 'next' button, you are giving you agree to the conditions.

Appendix C

Self-compassion scale (SDS-SF; Neff; 2003)

1 2 3 4 5

_____1. When I fail at something important to me I become consumed by feelings of inadequacy.

_____2. I try to be understanding and patient towards those aspects of my personality I don't like.

_____3. When something painful happens I try to take a balanced view of the situation.

_____4. When I'm feeling down, I tend to feel like most other people are probably happier than I am.

_____5. I try to see my failings as part of the human condition.

_____6. When I'm going through a very hard time, I give myself the caring and tenderness I need.

_____7. When something upsets me I try to keep my emotions in balance.

_____8. When I fail at something that's important to me, I tend to feel alone in my failure

_____9. When I'm feeling down I tend to obsess and fixate on everything that's wrong.

_____10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.

_____11. I'm disapproving and judgmental about my own flaws and inadequacies.

_____12. I'm intolerant and impatient towards those aspects of my personality I don't like.

Appendix D

Wellness health inventory (WBI; Sirois, 2001; 2019)

We would like to get some insight in your various health behaviours. The following questions are concerned with different habits and your daily life. Please read each statement carefully before answering. Please indicate how each statement is applicable to your situation.

Almost never Almost always

1 2 3 4 5

1.I control my salt intake.

2. I control my sugar intake.

3. I eat vegetables everyday (250- 500gr.).

4. I eat fruit everyday (250- 500gr.).

5. I do physical activity everyday (30 min or more).

6. I maintain a steady weight.

7. I smoke cigarettes.

8. I take the doctor's advice.

9. I use a seat belt while driving.

10. I protect my skin from sunshine.

11. I eat breakfast.

12. I get good night's sleep, for example uninterrupted, restful sleep.

13. I drink 3 or more caffeinated beverages, such as coffee, tea or colas, a day.

14. I exercise for 20 continuous or more minutes, to the point of perspiration, a day.

15. I eat at least 3 meals a day.

16. I take time to relax.

17. I eat fresh fruits and/ or vegetables.

18. I walk as much as possible, for example, I take the stairs not the lift, etc.

19. I take vitamins.

20. I eat junk foods, such as crisps, chips, sweets, french fries, etc.

21. I eat healthy, well-balanced meals.

22. I take natural supplements, such as garlic pills, Echinacea, herbals, etc.