Self-Compassion and its Relationship to Social Encounters, Relationship Status, Cohabitation and Mental Well-Being in Breast Cancer Patients:
A Questionnaire Study

Bachelor Thesis
Hanna Lahn

June 2021

Supervisors:
Drs. Judith Austin
Dr. Stans Drossaert

Faculty of Behavioral, Management and Social Sciences
Department of Psychology, Health and Technology
University of Twente
Enschede, Netherlands

Abstract

Background: One of the most prevalent chronic diseases nowadays is breast cancer. The disease comes with multiple physical and psychosocial challenges. Findings have shown that there is a positive impact of self-compassion on mental well-being and coping with different life circumstances. While it still needs to be investigated which predictors lead to this attitude, aspects such as the frequency of social encounters, relationship status and cohabitation were demonstrated to be promising. Nevertheless, there is a lack of research about the link to breast cancer patients. ***Aim:*** The purpose of this study is to examine the extent to which women with breast cancer are self-compassionate. In addition, there is a focus on whether social encounters, relationship status and cohabitation predict self-compassion and if self-compassion mediates the relationship between its predictors and mental well-being. ***Methods:*** Participants were 55 women with breast cancer that were patients in a rehabilitation centre 'Klinik Ostseeblick' at the Baltic sea in Germany. A questionnaire was published via the online platform Qualtrics. It encompassed illness-related questions and demographic variables including the relationship status, living situation and frequency of social encounters. The SCS-SF was used to assess general self-compassion and the SCCC for illness-specific self-compassion. The MHC-SF measured the mental well-being of the participants. ***Results:*** The patients reported a high extent of general and illness-specific self-compassion. Women who demonstrated a higher frequency of social encounters, reported a significantly higher level of self-compassion while relationship status and cohabitation could not account for it. The direct effect of social encounters on mental well-being was weakened after the inclusion of self-compassion. This indicated that general and illness-specific self-compassion partly explain the relation between social encounters and mental well-being. ***Conclusion:*** Breast cancer patients experience a high extent of general and illness-specific self-compassion. This construct is predicted by the frequency of social encounters and also partly mediates the relationship between social encounters and mental well-being. Besides, the quality of relationships and interactions should be investigated further. The insights that were gained can be used to understand the concept of self-compassion even better and to tailor interventions and research accordingly. This can support affected people that face psychosocial and physical challenges.

Keywords: self-compassion, breast cancer, social encounters, relationship status, cohabitation, mental well-being

Table of Contents

Introduction 3
Mental Well-Being and Distress 3
Self-Compassion 4
The present study 6
Methods 7
Design 7
Participants and Procedure 7
Materials 8
Demographic Data 8
Questions regarding Breast Cancer 9
Self-Compassion and Self-Criticism Scale for Patients with Chronic and Life-Threatening Conditions (SCCC) 9
Self-Compassion Scale-Short Form (SCS-SF) 10
Mental Health Continuum-Short Form (MHC-SF) 10
Data Analysis 11
Descriptive Statistics and Group Differences 11
Pearson Correlation and Multiple Regression Analysis for Mediation Effect 11
Results 12
Description of the Study Group 12
Extent of Self-Compassion in Breast Cancer Patients 14
Relationship Status, Social Encounters, and Cohabitation as Predictors of Self-Compassion 14
Self-Compassion as Mediator between Social Encounters and Mental Well-Being 16
Discussion 18
Strengths and Limitations 22
Conclusion 23
References 24
Appendix 30

Introduction

Nowadays, life in industrialized and increasingly less affluent countries is more and more denoted by the existence of chronic physical conditions. The term “chronic” has its origin in the Greek language and describes a long duration (Kaptein et al., 2003). Generally, one can speak of chronic diseases when the following criteria are fulfilled: the condition continues for a minimum of three months or reoccurs at least three times, a person is to a certain extent inhibited within the daily life for more than four months, and the need to be medically treated and being cared for (Van Den Bos, 1995). Nevertheless, there is no definite definition as well as no fixed time period in terms of when a condition is chronic (Kaptein et al., 2003). Nowadays, diseases that were once considered fatal are often similar to chronic illnesses (Olshansky & Ault, 1986).

One of the most prevalent types of chronic diseases that individuals in today’s society are diagnosed with is cancer (Bernell & Howard, 2016). Concerning women worldwide, especially in high-resource countries, breast cancer is the most common malignant tumour and the second highest cause of death (DeSantis et al., 2014). Each year there are 46 to 50 thousand new breast cancer diagnoses in Germany (Abdollahi et al., 2020). The disease can be seen as acute in nature since an early diagnosis offers a chance of recovery. In contrast, it is estimated that a delay in diagnosis and treatment of three months or more reduces the chance of recovery and survival (Arndt et al., 2002). The general 5-year relative survival rate of breast cancer patients increased to 83% (Holleczek et al., 2011). As a consequence, the affected people need to be constantly checked and treated. Based on that, it can affect the quality of someone’s life directly physically and mentally but also indirectly via the reaction of one’s society (Verbrugge & Patrick, 1995). Concluding, due to its ongoing symptoms and high survival rate, breast cancer can be considered more and more as a chronic illness.

Mental Well-Being and Distress

The life of breast cancer patients is determined by multiple challenges. More precisely, with the diagnosis comes the obstacle of integrating aspects like therapy and medication intake with family life and work (Haslbeck et al., 2015). These changes usually need to be managed without preparation. Not seldomly, affected people have insufficient competencies and knowledge so they need to inform themselves in detail about the new life circumstances which can appear as a barrier at first. At the same time, the amount of information can be overwhelming. Thus, a

patient's task is not only to follow the instructions of professionals but to inform themselves and constantly monitor, evaluate, and to some extent control the symptoms (Schaeffer & Haslbeck, 2016).

However, even though the typical amount of physical consequences of the illness decreased over the last decades, most women have to deal with its mental impact. Research has shown that the well-being of people with breast cancer can be decreased due to the fear that the cancer could spread, that they develop another kind of cancer, upcoming investigations, the stress that comes from surgeries, their changing self-concept and distress within their family (Ferrell et al., 1996). Moreover, they require resources to handle the stressful treatment, the uncertainty about if and how the disease comes back, their self-image based on a changed body, and the toxic medication they potentially take (Ganz, 2008). Therefore, affected people need to develop their own coping strategies which can be influenced by the course of the disease. According to Hürny et al. (1993), a person's quality of life is determined by one's subjective well-being. Affected people need to learn to accept and adapt to their condition and to aim at normalizing the situation instead of losing themselves in self-criticism and self-judgement. Nevertheless, often psychological consequences can be determined such as demotivation, frustration, dependence and irritation (Haslbeck et al., 2015). Henceforth, patients that receive a mix of different treatment methods are at a higher risk to experience its psychological impact. More precisely, it is not rare that patients feel anxious and depressed (Lovestone & Fahy, 1991). Another side effect is that they feel sexually dysfunctional and have a critical perspective on their body including their femininity (Lupton, 1994).

Self-Compassion

One coping strategy that has shown to have promising effects on well-being and dealing with diseases is self-compassion (Abdollahi et al., 2020; Pyszkowska, 2020). Self-compassion describes three interacting components of handling challenging situations in one's life. Firstly, it is a non-judgmental and kind attitude towards one's own pain and suffering by being understanding and accepting but not too harsh. Next, the construct can be reached by having an objective mindful view instead of over-identifying with negative thoughts and emotions. Thirdly, self-compassion encompasses seeing difficult times as part of a common human experience and not as being isolated from others. However, this construct is often not experienced because many people are stricter to themselves than to others and they do not want to be seen as egoistical (Neff,

2003a). After all, it is not about seeing one's problems as more important than those of others but recognizing and valuing them equally. This should also not be confused with self-pity since compassion includes taking a step back and connecting different instances without exaggerating one's concern (Neff, 2003a).

According to Allen et al. (2012), self-compassion has an increased positive effect on well-being in people with poorer physical health (e.g. breast cancer). The concept has proven to enhance a person's satisfaction with life and the ability to adapt to and cope with different circumstances that come with the chronic disease (Pyszkowska, 2020). Regarding breast cancer, caring for oneself is essential to keep a better quality of life and to handle the different stressors (Abdollahi et al., 2020). As mentioned before, when one is diagnosed with a chronic disease like breast cancer it is inevitable to incorporate the condition in one's life. Therefore, self-compassion leads an affected person to want to actively put effort into feeling well, and healthy and in living a normal life. There is a positive correlation to mental health such as an increased pain acceptance and declined depression and anxiety symptoms (Neff, 2003b). As a result, the aforementioned valuable impact of the construct can counteract the psychic strain and add to the quality of life of cancer patients. For example, this effect becomes apparent when considering an improved body image despite several potential changes that come with the condition (Przezdziecki et al., 2013). However, it is still unclear to what extent affected people display the construct. Additionally, since previous studies executed instruments that mainly focus on general self-compassion, for example, the Self-Compassion Scale, there are only a few indications on health-related factors (Neff, 2016). Considering general as well as illness-specific self-compassion could give a more complete evaluation of to what extent breast cancer patients display self-compassion.

Based on this, people change in the extent to which they incorporate self-compassion in their lives. This can be predicted by the social factors of a person (Neff & McGehee, 2010). Common humanity is part of self-compassion and encompasses shared experiences with others to feel socially connected. This experience counteracts a feeling of isolation that can come from a cancer diagnosis (Mattsson et al., 2007). General social encounters have also proven to reduce distress and increase a person's well-being (Rook 1983). However, Gove et al. (1983) have investigated that one of the most powerful predictors of mental well-being is the relationship status. To be precise, family and especially committed relationships and marriage serve as reward regarding a person's satisfaction and meaningful life. Reasons for this could be that married

couples have more material resources, better health and more social encounters (Soons & Kalmijn, 2009). A construct that has shown to have similar benefits is cohabitation (Perelli-Harris, & Styrc, 2018). The difference is that people that cohabitate do not need to be in a relationship (e.g. roommates) and couples might live separately (Lund et al., 2002). Studies demonstrated that marriage or relationships have a greater effect in collectivist countries. In individualist nations such as Germany cohabitation is supposed to have a greater impact (Diener et al., 2000).

Although the relevance of self-compassion for people with chronic diseases was shown, these studies fall short regarding women with breast cancer. Findings have also demonstrated the relationship between factors such as social encounters, relationship status and cohabitation towards mental well-being. Nevertheless, only very few studies have examined their impact on self-compassion which is also supposed to have a positive influence on psychological well-being (Abdollahi et al., 2020). Besides, there is a lack of research regarding what explains this relationship. Social support has shown to decrease perceived stress and increase mental well-being (Dreisoerner et al., 2020). This relationship might be established by being reminded of common humanity by means of belonging to others instead of being cut-off. Additionally, the support that one can receive from such social interactions needs to be accepted and made use of in order to have a positive effect. Hence, it is expected that self-compassion explains the relationship between social encounters, relationship status, cohabitation and mental well-being. These insights could be a basis for future research about self-compassion since its enhancement was suggested to be of value for compassion-focused therapeutic interventions (Mackintosh et al., 2018). This in turn could support breast cancer patients with a way to face psychosocial and physical challenges and increase their mental well-being.

The present study

This study aims to dive deeper into chronic diseases with a special focus on women with breast cancer. Based on this, a questionnaire study should lead to more insights on the impact of self-compassion on breast cancer patients as well as factors that potentially influence this construct and which role it plays in improving mental health. Hence, the research questions are the following:

RQ1: To what extent are women with breast cancer self-compassionate?

RQ2: Are relationship status, cohabitation and social encounter predictors of self-compassion in breast cancer patients?

RQ3: Does self-compassion mediate the connection between relationship status, cohabitation, social encounters and mental well-being?

Methods

Design

To examine the three research questions regarding the connection of self-compassion and its predictors and whether the construct is a potential mediator, a cross-sectional, correlational study with an online questionnaire has been executed.

Participants and Procedure

The study has been approved by the BMS Ethics Committee of the University of Twente under the request number 210500 as well as by the principal of the rehabilitation centre. The data were collected via convenience sampling from April 17th, 2021 to June 16th, 2021. The setting was the rehabilitation centre 'Klinik Ostseeblick' for gynaecological oncology and dermatology at the Baltic sea in Germany. Inclusion criteria were the following: a minimum age of 18 years, the diagnosis of breast cancer, access to a device with an internet connection. The exclusion criterion was: if not at least 70% of the questionnaire were completed, the data was deleted. Based on this, three out of 58 participants were excluded. The final dataset included 55 women with breast cancer out of approximately 80 breast cancer patients including patients that move out and new ones moving in each month.

In order to fill in the questionnaire, the psychologists of the rehabilitation centre handed out a document with a short description of the study, privacy conditions as well as a link that led to the online survey. All questionnaires were hosted on the platform Qualtrics. Firstly, participants were offered a consent form that included information about the background and goal of the study and that it is voluntary to participate and to stop at any point in time. Additionally, confidentiality was granted, and it was mentioned how the data will be used such as that it is only for research

purposes and will be deleted afterwards. They were then asked to sign the form virtually to indicate their consent in participation. Next, the respondents received an introduction to the questionnaire that indicated a duration of approximately 20-30 minutes for three questionnaires as well as information about the demographic measures. After filling in the three questions the respondents were informed that they have completed the study and were thanked for their time. Additionally, they were offered the opportunity to give their email address for further questions and information. It was also mentioned that their email address and the data are stored separately.

Materials

The online survey of this study consisted of different questionnaires that were translated into German based on a cross-translation among four students. To answer the first research question, the variables illness-specific self-compassion including boundary guarding, use of support, and common humanity and general self-compassion were measured. Therefore, a sample from prior research by Volkov (2020) served as a valuable comparison as it consists of different chronic conditions including cancer as well as a similar demographic background (e.g. highly educated, mainly female, no migration background). The second research question added social encounters, relationship status and cohabitation. Social encounters, illness-specific, and general self-compassion and mental well-being were the relevant variables for the third research question. The following paragraphs focus on the questionnaires that were needed to answer the research questions.

Demographic Data

In order to obtain general information about the participants, demographic data was assessed. These included an open question about their age. The answering categories of educational level were grouped into low (elementary school), moderate (10^{th} grade, A-Levels) and high (apprenticeship, college, university). Migration was grouped in non-German (from Western or non-Western countries) and German. To measure predictors regarding the social influence the respondents were also asked to fill in three questions about their living and social situation (see Appendix for all demographic questionnaire items and groupings). These included if they were in a relationship or not, if they were living alone or cohabitate and the frequency of social encounters in terms of how often the participants have contact with people, they are close to (ranging from

rarely to often). For sensibility reasons, each question included the option to withdraw from the specific item.

Questions regarding Breast Cancer

To receive a general overview of the disease, the respondents indicated their condition based on seven items (see Appendix for all items regarding breast cancer). The first item was an open question that addressed the name of the chronic condition followed by when they were diagnosed including a range from less than six months ago to more than 10 years ago. Next, it was asked if they currently receive treatment such as medication or other medical treatments, lifestyle restrictions or none. Thirdly, the survey included a VAS scale regarding the extent to which the participant would rate their health-related quality of life where zero stood for death and 100 for perfect health (Crichton, 2001). The participants also needed to indicate how often their condition is visible (ranging from not visible to always visible) and whether it is recurrent, progressive or stable. Lastly, it was asked how often (ranging from not at all to always) the participants are restricted in their social role and physical condition.

Self-Compassion and Self-Criticism Scale for Patients with Chronic and Life-Threatening Conditions (SCCC)

Illness-specific self-compassion was measured with the self-compassion subscales of the newly developed SCCC (Volkov, 2020). The following three subscales were used: ‘compassionate boundary-guarding’ (4 items), with items such as “when I felt I reached my limit, I tried to be understanding and patient towards my limitations.”. Another subscale is ‘use of support’ (7 items), for example, “when I needed help, I asked for help.”. Lastly, ‘compassionate self-regulation’ (16 items) was measured by statements like “when I thought about my condition, I accepted that it is there, and I cannot change it.” Respondents were asked to indicate the frequency they experienced each of the 31 statements in the past four weeks. The five-point Likert scale contains a response range from 1 = never to 5 = always. Higher total mean scores indicated higher levels of illness-specific self-compassion. The scale showed an excellent internal consistency in the current study ($\alpha = .93$). In terms of the specific subscales, compassionate boundary-guarding has a good reliability ($\alpha = .76$) Use of support has a very good reliability ($\alpha = .84$) which also goes for compassionate self-regulation ($\alpha = .88$).

Self-Compassion Scale-Short Form (SCS-SF)

General self-compassion was measured with the SCS-SF in addition to the chronic illness-specific self-compassion (Raes et al., 2011). The questionnaire consists of six components. Firstly, self-kindness vs. self-judgement (e.g. 'I try to be understanding and patient towards those aspects of my personality I don't like' vs. 'I'm disapproving and judgmental about my own flaws and inadequacies'). Secondly, common humanity vs. isolation (e.g. 'I try to see my failings as part of the human condition' vs. 'When I'm feeling down, I tend to feel like most other people are probably happier than I am'). Thirdly, mindfulness vs. over-identification (e.g. 'When something upsets me, I try to keep my emotions in balance' vs. 'When I fail at something important to me, I become consumed by feelings of inadequacy'). The negative items (self-judgement, isolation, over-identification) were reversed coded. With a total of twelve items, it encompasses a five-point Likert scale per statement including a range from 1 = almost never to 5 = almost always. The higher the mean score, the higher the level of self-compassion. The scale showed a good reliability in the current study ($\alpha = .88$).

Mental Health Continuum-Short Form (MHC-SF)

Mental well-being was measured with the MHC-SF (Keyes, 2002). This scale entails 14 items that measure the extent of positive mental health. It incorporates three items about emotional (e.g. During the past month, how often did you feel interested in life?), six about psychological (e.g. During the past month, how often did you feel that you liked most parts of your personality?), and five items about social well-being (e.g. During the past month, how often did you feel that people are basically good?). The answers indicated the frequency of having experienced each statement within the last month. More precisely, the participants were able to choose on a six-point Likert scale including a range of 1 = never to 6 = every day. A higher total score (ranging from 14 to 84) indicated better mental well-being. The scale showed an excellent reliability in the current study ($\alpha = .91$). This included a very good internal consistency of psychological well-being ($\alpha = .81$) and social well-being ($\alpha = .82$), as well as a good reliability of emotional well-being ($\alpha = .79$).

Data Analysis

All data analysis was performed using SPSS version 23.

Descriptive Statistics and Group Differences

In order to create an overview of the audience that participated, a descriptive statistics analysis was conducted for the demographic variables, breast cancer as a chronic condition and quality of life. Therefore, the number of answers, percentages of respondents, the means and standard deviations (SD) were investigated. To answer the first research question, it was statistically determined whether there is a significant difference between the extent of illness-specific (including its subscales) and general self-compassion as well as mental well-being in breast cancer participants of this study and participants with different types of chronic conditions (e.g. cancer, Morbus Crohn) from the study by Volkov (2020). Therefore, a t-test was used with a significance level of $\propto < .05$. Meaning, a p-value below .05 ($p \leq \propto.$) would indicate that a significant difference was found between the two groups.

Pearson Correlation, Multiple Regression Analysis and Mediation Effect

As an exploratory analysis prior to the regression, it was statistically checked if there is a relationship between illness-specific (including its subscales) and general self-compassion with relationship status, social encounters and cohabitation. Therefore, a two-tailed bivariate Pearson correlation was used. It was assumed that there is a correlation (H1: $r \neq 0$) and that the null hypothesis (H0: $r = 0$) can be rejected. In addition to that, the null hypothesis can be rejected if there is a statistically significant linear relationship ($p < .05$). Based on the correlation coefficient, the correlation was estimated as either weak (0 to .20), moderate (.30 to .59) or high (.60 to 1) (Schober et al., 2018).

In order to answer the second research question, multiple regression analysis was implemented to check if the independent variables relationship status, social encounters and cohabitation influence the dependent variable self-compassion. A higher R-squared value showed if the independent variable accounted for the dependent variable. In case of a significant influence (H1: $p < .05$), the independent variable has an influence on the dependent variable.

To examine the third research question if self-compassion explains the relationship between relationship status, social encounters, and cohabitation and mental well-being, the logistic

regression path analysis modelling tool PROCESS v3.5 by Hayes was used for a mediation analysis. The indirect effect was tested with a non-parametric bootstrapping. If the zero falls outside the lower and upper bound of the 95% confidence interval, then the indirect effect is non-zero. If the direct effect of the independent variable on the dependent variable is higher than when the mediator is added, then self-compassion explains the relationship.

Results

Description of the Study Group

This study contains a sample of 55 female breast cancer patients (see Table 1). The age of the participants ranged from 22 to 74 years with an average age of 47 years. Most of them were highly educated (university, apprenticeship or college). The majority of the participants was born in Germany. Most of the women were in a relationship and also the majority cohabitated with a partner, a friend or someone else. Besides, the participants showed to sometimes or often have social encounters with people they are close to.

Table 1 illustrates that most of the affected women were diagnosed less than a year or between one and five years ago. More than half of the breast cancer patients were taking medications or underwent therapy. Moreover, the patients perceived their health-related quality of life as moderate to high. Next, for almost half of the sample the condition was not visible and if so, only under specific circumstances such as going to the beach. The condition influenced their social role almost not at all but often limited their physical condition.

Table 1

Overview of characteristics related to the demographics and breast cancer of the study group (N=55)

Item	Category	N (%)	M (SD)
Age in years[a]			47.4 (13.5)
Education level			
	Low	1 (1)	
	Moderate	12 (21)	
	High	41 (74)	
	Unknown	1 (1)	
Migration			
	German	47 (85)	
	Non-German	8 (14)	
Relationship status			
	Single	8 (14)	
	Relationship/Married	47 (85)	
Cohabitation			
	Alone	14 (25)	
	Cohabiting	40 (72)	
Social encounters			
	Rarely	7 (12)	
	Sometimes	23 (41)	
	Often	25 (45)	
Restriction social role			
	Never	32 (58)	
	Often	20 (36)	
	Almost always	3 (5)	
Restriction physical condition			
	Never	17 (30)	
	Often	34 (61)	
	Almost always	4 (7)	
Visibility			
	Not visible	25 (45)	
	Sometimes	24 (43)	
	Always	6 (10)	
Time diagnosis			
	Less than one year ago	20 (36)	
	Between 1 and 5 years ago	22 (40)	
	At least 5 years ago	13 (23)	
Treatment			
	Yes, medication or therapy	34 (61)	
	Yes, lifestyle restrictions	11 (20)	
	No treatment	10 (18)	
Quality of life[b]			68.9 (16.1)

Note. N = number of respondents, M = mean of respondents, SD = standard deviation of respondents, % percentage of respondents, unknown = prefer not to answer, [a]age range from 22-74 years, [b]VAS scale (0 = death to 100 = perfect health)

Extent of Self-Compassion in Breast Cancer Patients

Table 2 shows all means, standard deviations, and test statistics regarding the difference between illness-specific and general self-compassion as well as mental well-being between breast cancer participants of this study and different chronic conditions that were examined by Volkov (2020). Breast cancer participants reported a significantly higher score of illness-specific self-compassion compared to the sample of Volkov (2020). Regarding the subscales, breast cancer patients showed the most self-compassion on use of support and the biggest difference to participants with different conditions on self-regulation. In terms of general self-compassion, the participants of this study also scored higher. With a difference of .2, illness-specific and general self-compassion differ only slightly among breast cancer patients. Further, the participant's mental health was indicated to be high compared to the study of Volkov (2020). All in all, the first research question regarding the extent to which breast cancer patients possess self-compassion can be answered as the following: breast cancer patients display a high extent of illness-specific and general self-compassion.

Table 2

One sample T-Test statistics for patients with breast cancer (N=55) and different chronic conditions by Volkov (N=285)

	Breast cancer	Different conditions		
	M (SD)	*M (SD)*	t(df)	*p*
Illness-specific self-compassion	3.8 (.5)	3.2 (.54)	9.38 (54)	.00**
Self-regulation	3.7 (.5)	2.4 (.60)	21.60 (54)	.00**
Boundary-guarding	3.5 (.7)	3.0 (.84)	5.70 (54)	.00**
Use of Support	4.0 (.6)	3.1 (.80)	11.10 (54)	.00**
General self-compassion	3.6 (.6)	2.8 (.70)	9.51 (54)	.00**
Mental well-being, total score[a]	57.8 (9.10)	33.60 (14.43)	18.01 (54)	.00**

Note. **Correlation is significant at the .001 level (2-tailed), *5-point Likert scale (1-5), [a]scale range 14-84*

Relationship Status, Social Encounters, and Cohabitation as Predictors of Self-Compassion

When looking at the association between social encounters and self-compassion, Table 3 illustrates that there was a moderate positive correlation between social encounters and illness-specific self-compassion ($r = .44$, $p < .01$) and also regarding general self-compassion ($r = .42$, $p < .01$). Relationship status was moderately associated with general self-compassion ($r = .27$, $p < .05$) but not with illness-specific self-compassion ($r = .24$, $p = .08$). Lastly, cohabitation was correlated moderately positive with the sub-scale of the SCCC use of support ($r = .31$, $p < .05$).

Table 3

Bivariate Pearson correlation for variables relationship status, social encounters, cohabitation, illness-specific self-compassion including its subscales self-regulation, use of support, and boundary-guarding and general self-compassion

Variables	1	2	3	4	5	6	7	8
Relationship status	1							
Social encounters	.42**	1						
Cohabitation	.71	.50**	1					
Illness-specific self-compassion	.24 (.08)	.44**	.26 (.06)	1				
Self-regulation[a]	.19 (.18)	.38**	.19 (.16)	.95**	1			
Use of support[a]	.24 (.08)	.41**	.31*	.88**	.74**	1		
Boundary-guarding[a]	.26 (.06)	.41**	.22 (.12)	.78**	.63**	.66**	1	
General self-compassion	.27*	.42**	.25 (.07)	.70**	.72**	.57**	.48**	1

Note. **. Correlation is significant at the .01 level (2-tailed), *. Correlation is significant at the .05 level (2-tailed), (insignificant p-values), brackets show the p-value of the items that do no correlate significantly, [a]subscale of illness-specific self-compassion

Secondly, with illness-specific self-compassion (see Table 4), a significant regression equation was found [$F = (3, 50) = 3.14$, $p < .03$] with an R^2 of .16. This revealed that 16% of illness-specific self-compassion's variance were explained by all predictors. The outcomes indicated that social encounters predicted illness-specific self-compassion but cohabitation, as well as relationship status, had zero effect on it.

Table 4

Multiple Regression Analysis of relationship status, social encounters and cohabitation for predicting illness-specific self-compassion (N=54)

				95% CI			
Variable	B	SE	β	Lower	Upper	t	p
Constant	3.02	.32	.13	2.39	3.70	9.55	.00
Relationship status	.16	.23	.32	-.31	.63	.70	.50
Social encounters	.21	.10	.32	.01	.41	2.11	.04
Cohabitation	.01	.20	.01	-.40	.40	.04	.97

Note. $[F = (3, 50) = 3.14, p < .33], R^2 = .16$

Besides, general self-compassion as a dependent variable also resulted in a significant regression equation [F = (3, 50) = 3.34, p < .03] with an R^2 of .17 (see Table 5). Meaning, all predictors explained 17% of the variance in general self-compassion. Again, social encounters but not cohabitation and relationship status can predict general self-compassion. All in all, the second research question whether relationship status, social encounters and cohabitation are predictors of self-compassion can be answered as the following: self-compassion can be predicted by social encounters but not by cohabitation and relationship status. Hence, people with more social encounters are generally and illness-specific more self-compassionate.

Table 5

Multiple Regression Analysis of relationship status, social encounters and cohabitation for predicting general self-compassion (N=54)

				95% CI			
Variable	B	SE	β	Lower	Upper	t	p
Constant	2.54	.40		1.74	3.34	6.40	.00
Relationship status	.24	.30	.20	-.35	.83	.83	.41
Social encounters	.30	.12	.33	.03	.53	2.21	.03
Cohabitation	-.03	.25	-.03	-.52	.46	-.13	.90

Note. [F=(3, 50)= 3.34, p < .03], R^2 of .17

Self-Compassion as Mediator between Social Encounters and Mental Well-Being

The variables cohabitation and relationship status were not investigated because they were not significant predictors of self-compassion. The total effect illustrated in Figure 1 revealed that social encounters has a significant impact mental well-being (b = .52, s.e. = .12, p < .01). Meaning, women who reported that they engage in more social encounters, reported a significantly better mental well-being. As already shown before, social encounters also have a statistically significant effect on illness-specific self-compassion (see Figure 2) and general self-compassion (see Figure 3). The direct effect of self-compassion on mental well-being was positive (illness-specific: b =.60, s.e. = .20, p < 0.01; general: b = .54, s.e. = .15, p < .01), demonstrating that people with a higher illness-specific or general self-compassion, were more likely to have a better mental well-being than those that score lower on the measure.

With the inclusion of the mediating variables (illness-specific and general self-compassion), the indirect effect of social encounters on mental well-being through self-compassion was found significant and weakened compared to the exclusion of the mediator

(illness-specific: IE = .20; general: IE = .20). Table 6 shows that the zero of the indirect effect of illness-specific self-compassion fell outside the lower and upper bound of the 95% interval which also goes for general self-compassion. This means that the relationship between social encounters and mental well-being was partly mediated by illness-specific and general self-compassion.

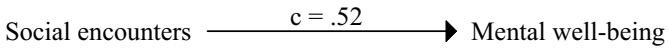

Figure 1. Total effect of social encounters on mental-wellbeing

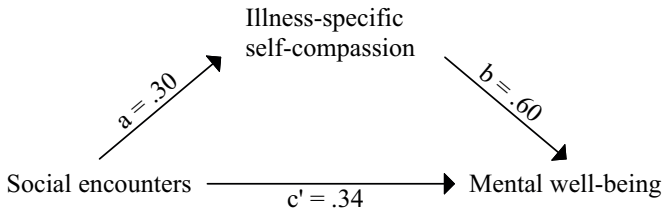

Figure 2. Standardized regression coefficients for the relationship between social encounters and mental well-being mediated by illness-specific self-compassion (N=55)

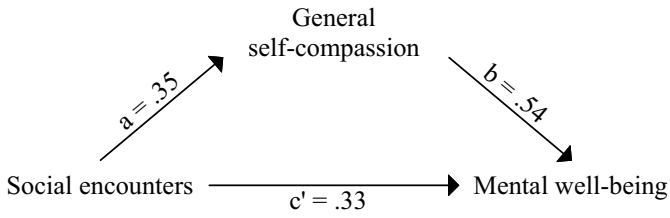

Figure 3. Standardized regression coefficients for the relationship between social encounters and mental well-being mediated by general self-compassion (N=55)

Table 6

Completely standardized indirect effect with illness-specific and general self-compassion (N=55)

Variable	Effect	BootSE[a]	BootLLCI[b]	BootULCI[c]
Illness-specific self-compassion	.20	.10	.03	.31
General self-compassion	.20	.07	.06	.31

Note. [a]*Bootstrap error estimation,* [b]*Lower limit confidence interval,* [c]*Upper limit confidence interval*

Discussion

The aim of the study was to find out the extent and predictors of self-compassion as well as a mediator of these predictors and mental well-being in women with breast cancer. The participants displayed a high extent of self-compassion. Further, social encounters demonstrated a moderate positive association with general and illness-specific self-compassion. Relationship status was only moderately positively correlated with general self-compassion and cohabitation with the subscale 'use of support' of illness-specific self-compassion. It was also shown that only social encounters were able to predict self-compassion in breast cancer patients. Finally, self-compassion partly explained the impact of social encounters on mental well-being.

Firstly, the results pointed out that the amount of general and illness-specific self-compassion did not differ notably. Nevertheless, it is recommended for further studies about health conditions to investigate both instruments of self-compassion as they offered a deeper insight into its different facets. An interesting finding was that patients of this study showed a high extent of self-compassion compared to those of the study with different chronic conditions by Volkov (2020). More precisely, the results of illness-specific self-compassion suggested that they tend to self-regulate, use support and are relatively high on boundary-guarding. Additionally, the scale for general self-compassion revealed that they show a higher level in self-kindness, mindfulness and reason things based on common humanity instead of overidentification, isolation and self-judgment. This was unexpected because being chronically ill often comes with the consequence of reaching one's limits and becoming self-critical (Castilho et al., 2015). For instance, the sample of Volkov (2020) consisted of multiple chronic conditions among which cancer only made up 1%, while the most common conditions such as Morbus Crohn were already partially expected to score high on the self-criticism scale.

One potential explanation why breast cancer patients displayed a high extent of self-compassion is that the sample consisted of patients of a rehabilitation centre. There, they receive different kinds of therapies that should help them to integrate the condition into their lives and to cope with it. While the majority of this study's sample indicated to receive medical or therapeutic treatment, it is not known which specific therapies the participants received in the clinic but only that these are voluntary and adjusted to the patient's needs and abilities. The website of the centre showed that relaxation techniques and stress management are offered as well as strategies to incorporate the condition into daily life. There are also psycho-oncologists that give presentations

on how the patients can use their resources. In addition, group sessions give the opportunity to exchange with other affected patients (Klinik Ostseeblick, n.d.). This is important since the exchange about the condition with other affected people was reported to be an aspect that supported self-compassion in cancer patients (Vlierberghe, 2019). Furthermore, many psychologists value the importance of self-compassion within the therapy such as mindfulness-based cognitive therapy (Germer & Neff, 2013). Thus, it is possible that the patients already worked on their self-compassion or on factors that increase it. Those aspects might not apply to the participants by Volkov (2020) as they were recruited as part of self-help groups on social media rather than a medical centre.

The second point to consider why breast cancer patients scored higher on self-compassion could be that the construct encompasses "the desire to alleviate the suffering and its causes in one's self and those around us" (Negi, 2013, p 172-180). Since becoming ill is a type of suffering, self-compassion can be seen as a response to it, so breast cancer patients show an increased level of self-compassion (Hueso Montoro et al., 2012).

A third alternative that might have contributed is a potential early diagnosis and the resulting increased chances of recovery. The 23% of the sample that were diagnosed over five years ago already underline the high 5-year survival rate for breast cancer patients. These aspects could have a positive impact on the patient's self-compassion or a reduced risk of self-criticism (e.g. less regret of having consulted a doctor too late, more optimistic outlook on life) (Wang, 2017). In this case, it would be interesting to observe the rates at a later point in time to see if the expected high survival rate is confirmed and which influence this would have on the extent of self-compassion. Therefore, an early diagnosis and resulting chances of recovery might be a valuable variable for future research that are better observable by conducting a longitudinal study. All in all, breast cancer patients appeared to be highly self-compassionate, even more than patients with other chronic diseases. This is beneficial for women with breast cancer as they need to cope with new psychosocial and physical challenges which they are often unprepared for (Purdie & Morley, 2016). However, more insights are needed about a comparison with a healthy population or cancer patients.

The findings that mainly social encounters correlated with self-compassion as well as that this was the only predictor within this study were surprising and expected at the same time. On one side, this confirms the assumptions that were addressed before. Earlier findings have shown

that people tend to be happier the less time they spend alone (Mehl et al., 2010). Social interactions showed to affect beneficial health behaviours. The stress-buffering model describes that social contacts counteract stressful physiological and psychological consequences such as chronic stressors like breast cancer (Hinzey et al., 2016). Interpersonal functioning is related to self-compassion by means of being emotionally connected, accepting, supporting, perspective-taking, forgiving and trusting (Germer & Neff, 2013). Furthermore, social interactions can serve as emotional support and as instrumental support (e.g. help with daily tasks). According to Hinzey et al. (2016), a lack of social isolation as well as resulting perceived loneliness is even associated with a decreased long-time survival rate. A converse effect was found with regard to a high amount of social interactions. Hence, research suggests that social encounters reduce loneliness by means of social isolation and positively affect self-compassion (Akin, 2010; Drageset, 2004). Based on that, the more often one has contact with people one is close to, the higher is the extent of being self-compassionate.

A possible reason that social encounters were only moderately correlated but not the main predictor of self-compassion is that illness-specific self-compassion is constituted of factors like self-care, having positive thoughts and self-acceptance in the first place. In addition, a qualitative study showed that support from others is important but not the most common aspect of self-compassion compared to factors that concern the self (Vlierberghe, 2019). This indicated that social encounters have a beneficial role regarding self-compassion but are not the key predictor. In the future, it might be of interest what predicts self-compassion strongly. For practical implications, it can be noted that the factor social encounters is important to include in interventions that intend to increase self-compassion and mental well-being. This can be reached by informing patients about it and consider their social environment. Thereby, the increased extent of self-compassion that is supported by social engagement can be a novel therapeutic addition to current treatments and practices.

What was unexpected is that relationship status did not correlate with illness-specific self-compassion but only with general self-compassion. Although, cohabitation and relationship status have shown to counteract loneliness, it was revealed that even older women that live alone and do not have a partner, are not socially isolated and lonely. This applies particularly if they frequently contact friends or are close with family members (Essex & Nam, 1987). Firstly, the positive association but not given impact results in a causal direction that is unclear. It may be that self-

compassionate people are more likely to enter a relationship. It is also possible that they tend to be married more often since self-compassion was researched to be important in a relationship (Jacobson et al., 2018).

It might also be that it is not the cohabitation or relationship status itself but the quality of it. For instance, just because one has a partner or cohabitates with someone does not automatically mean that the other person(s) offers a caring and understanding relationship. However, research has suggested that support is essential for cancer patients which was also supported by the outcome that the participants use support to a high extent (Drabe et al., 2013). Nevertheless, the distress that can come from cancer appears to have a negative impact on the quality of relationships. These negative changes rather lead to stress than self-compassion (Drabe et al., 2013). Additionally, Lovestone and Fahy (1991) have shown that a person's poor relationship status and unsupportive network can decrease one's well-being in terms of such a life-threatening condition. Meaning, not a relationship status itself fosters self-compassion but a high-quality relationship (Jacobson et al., 2018). Additionally, the interaction with external contacts that are not part of the daily life might be valued even more as they are less likely to be taken for granted. For example, a friend one talks to a few times per week could evoke a greater positive effect on the mood than a partner or roommate that one is almost always surrounded by. Concerning this study, the relationships or marriages of the participants might have been high quality which potentially led to an increased level of self-compassion.

Interestingly, the health care workers of the rehabilitation centre added that many of their patients intentionally reduce their circle of contacts. Research is needed on the possibility that affected people reduce this circle based on their quality by means of being in contact with people that understand and support them appropriately and thereby, add to their well-being. The causal direction of relationship status and the importance of the quality of it and of cohabitation is yet to be researched further. Understanding the quality of social support can be beneficial for psychological interventions as these can lay a focus on optimizing the social support systems of the affected people.

Lastly, it was expected that self-compassion partly mediates the impact of social encounters on mental well-being. There were prior findings of the buffering effect of self-compassion concerning psychological well-being. More precisely, being self-compassionate increases emotional, social and psychological well-being and decreases anxiety and depression (Akin,

2010). In addition, it was investigated that self-compassion is predicted by social encounters which in turn, was demonstrated to predict psychological well-being as well (Jacobson et al., 2018). Thus, it is reasonable that, according to Rook (1983), a higher frequency of social encounters reduces psychological distress and predicts better mental well-being even when self-compassion was not included. At the same time, this effect was partly explained by self-compassion because a higher frequency of social encounters showed increasing general and illness-specific self-compassion in breast cancer patients which was beneficial for their psychological health. This finding can be explained by seeing the incidents as part of common humanity and by the increased tendency to be accepting including accepting help from others. This in turn contributes to well-being (Rama et al., 1986). Even though the mediation is not causal, these findings add to future research as a base to find out more about why self-compassion only partly explains the relationship. To investigate this structure can help in making optimal use of the benefits that come from social interactions with regard to increasing the mental well-being in patients with breast cancer.

Strengths and Limitations

The study includes multiple strong points. Firstly, despite the sensibility of the topic and a limited number of patients in the clinic due to the current pandemic, an unexpectedly high number of participants filled in the questionnaire. Health care workers of the clinic reported that many participants were positively surprised about taking part. The reason for this was that especially in the clinic of interest, it is not common that such studies are conducted because of privacy issues and required effort as mentioned before. Additionally, they said that the patients felt interested in and were able to “voice” their feelings and perspectives outside of the regular therapy sessions. Moreover, the cooperation with the rehabilitation centre for gynaecological oncology and dermatology at the Baltic sea in Germany offered a way to collect reliable data from people diagnosed with breast cancer. The population of prior studies was non-clinical in many cases, whereas this study contributed with a clinical population that is valuable for generalizing the findings (Mackintosh et al., 2018). Finally, to our knowledge, this was the first study regarding general and illness-specific self-compassion and their predictors as well as its role as a mediator for mental well-being in breast cancer patients as a target group. This can be used as a baseline for further research and that interventions can be developed or improved. Resultantly, it is advisable

to understand the reasons behind the variable's effect even better and foster it to increase the well-being of breast cancer patients.

The study also has some limitations that should be taken into account to improve future research. Firstly, the outcomes might not be generalizable to the daily life due to a pandemic during the data collection as well as a rehabilitation centre as the setting. Whether this affects the influences of the variables regarding social relations should be explicitly investigated. For example, the impact of cohabitation and also benefits of the presence of the partner during the time in the rehabilitation centre might be different than when they are in their normal environment. Research might be able to control this by choosing another setting or by conducting a longitudinal study. The next point that could be improved is that the sample was rather homogenous due to their mainly German origin and high education. López et al. (2018) revealed that self-compassion was lower for lower educated people. In addition, where a person lives by means of the culture also has a significant impact on how important it is seen to be self-compassionate (Montero-Marin, 2018). Therefore, the results may not be generalizable to people that did not finish a training or university degree and that come from different countries. Future research is needed to specifically investigate the relationship between education and self-compassion as well as which countries show more or less self-compassion. Lastly, the participants were up to 74 years old which, according to the health care workers, increased the difficulty for them to fulfil an online survey without help. This barrier was underlined by factors such as a lack of understanding of the questions, no device with internet connection and typing in the link manually. With respect to that, more optimal ways of data collection might be via a paper and pencil survey or by conducting clinical interviews to avoid a self-report as a measurement.

Conclusion

In conclusion, the results of the study suggest that breast cancer patients experience a high extent of general and illness-specific self-compassion. This construct is predicted by the frequency of social encounters and also partly mediates the relationship between social encounters and mental well-being. Based on this, there is growing evidence that self-compassion and social encounters have promising benefits for mental well-being and coping with challenges of breast cancer patients. Besides, the quality of relationships and interactions should be investigated further instead of the simple fact that one has a partner or cohabitates. The insights that were gained can

be used to gain an improved understanding of the concept of self-compassion and to tailor interventions and research accordingly. These interventions can support affected people with psychosocial and physical challenges they are facing.

References

Abdollahi, A., Taheri, A., & Allen, K. A. (2020). Self-compassion moderates the perceived stress and self-care behaviors link in women with breast cancer. *Psycho-oncology*, *29*(5), 927-933. https://doi.org/10.1002/pon.5369

Akin, A. (2010). Self-compassion and Loneliness. *International Online Journal of Educational Sciences*, *2*(3). https://www.researchgate.net/profile/Ahmet-Akin-10/publication/49591624_Self-compassion_and_Loneliness/links/53e37d490cf23a7ff74952ef/Self-compassion-and-Loneliness.pdf

Allen, A. B., Goldwasser, E. R., & Leary, M. R. (2012). Self-compassion and well-being among older adults. *Self and Identity*, *11*(4), 428-453. https://doi.org/10.1080/15298868.2011.595082

Arndt, V., Stürmer, T., Stegmaier, C., Ziegler, H., Dhom, G., & Brenner, H. (2002). Patient delay and stage of diagnosis among breast cancer patients in Germany–a population-based study. *British journal of cancer*, *86*(7), 1034-1040. https://doi.org/10.1038/sj.bjc.6600209

Bernell, S., & Howard, S. W. (2016). Use your words carefully: what is a chronic disease?. *Frontiers in public health*, *4*, 159. https://doi.org/10.3389/fpubh.2016.00159

Bono, R., Blanca, M. J., Arnau, J., & Gómez-Benito, J. (2017). Non-normal distributions commonly used in health, education, and social sciences: a systematic review. *Frontiers in psychology*, *8*, 1602. https://doi.org/10.3389/fpsyg.2017.01602

Castilho, P., Pinto-Gouveia, J., & Duarte, J. (2015). Exploring self-criticism: Confirmatory factor analysis of the FSCRS in clinical and nonclinical samples. *Clinical psychology & psychotherapy*, *22*(2), 153-164. https://doi.org/10.1002/cpp.1881

Crichton, N. (2001). Visual analogue scale (VAS). *J Clin Nurs*, *10*(5), 706-6. https://com-jax-emergency-pami.sites.medinfo.ufl.edu/files/2015/03/Visual-Analog-Scale-VAS-in-depth.pdf

DeSantis, C., Ma, J., Bryan, L., & Jemal, A. (2014). Breast cancer statistics, 2013. *CA: a cancer journal for clinicians*, *64*(1), 52-62. https://doi.org/10.3322/caac.21203

Diener, E., Gohm, C. L., Suh, E., & Oishi, S. (2000). Similarity of the relations between marital status and subjective well-being across cultures. *Journal of cross-cultural psychology*, *31*(4), 419-436. https://doi.org/10.1177/0022022100031004001

Drabe, N., Wittmann, L., Zwahlen, D., Büchi, S., & Jenewein, J. (2013). Changes in close relationships between cancer patients and their partners. *Psycho-Oncology*, *22*(6), 1344-1352. https://doi.org/10.1002/pon.3144

Drageset, J. (2004). The importance of activities of daily living and social contact for loneliness: a survey among residents in nursing homes. *Scandinavian Journal of Caring Sciences*, *18*(1), 65-71. https://doi.org/10.1111/j.0283-9318.2003.00251.x

Dreisoerner, A., Junker, N. M., & Van Dick, R. (2020). The relationship among the components of self-compassion: A pilot study using a compassionate writing intervention to enhance self-kindness, common humanity, and mindfulness. *Journal of Happiness Studies*, 1-27. https://doi.org/10.1007/s10902-019-00217-4

Essex, M. J., & Nam, S. (1987). Marital status and loneliness among older women: The differential importance of close family and friends. *Journal of Marriage and the Family*, 93-106. https://doi.org/10.2307/352674

Ferrell, B. R., Grant, M., Funk, B., Garcia, N., Otis-Green, S., & Schaffner, M. L. (1996). Quality of life in breast cancer. *Cancer practice*, *4*(6), 331-340.

Ganz, P. A. (2008). Psychological and social aspects of breast cancer. *Oncology*, *22*(6), 642-642.

Germer, C. K., & Neff, K. D. (2013). Self-compassion in clinical practice. *Journal of clinical psychology*, *69*(8), 856-867. https://doi.org/10.1002/jclp.22021

Gove, W. R., Hughes, M., & Style, C. B. (1983). Does marriage have positive effects on the psychological well-being of the individual? *Journal of health and social behavior*, 122-131. https://doi.org/10.2307/2136639

Haslbeck, J., Klein, M., Bischofberger, I., & Sottas, B. (2015). Leben mit chronischer Krankheit. *Die Perspektive von Patientinnen, Patienten und Angehörigen. Obsan Dossier*, *46*.

Hinzey, A., Gaudier-Diaz, M. M., Lustberg, M. B., & DeVries, A. C. (2016). Breast cancer and social environment: getting by with a little help from our friends. *Breast Cancer*

Research, *18*(1), 1-9. https://doi.org/10.1186/s13058-016-0700-x

Holleczek, B., Arndt, V., Stegmaier, C., & Brenner, H. (2011). Trends in breast cancer survival in Germany from 1976 to 2008—a period analysis by age and stage. *Cancer epidemiology*, *35*(5), 399-406. https://doi.org/10.1016/j.canep.2011.01.008

Hueso Montoro, C., Siles González, J., Amezcua, M., Bonill de las Nieves, C., Pastor Montero, S., & Celdrán Mañas, M. (2012). Understanding the suffering of a patient with an illness: signs, context and strategies. *Revista latino-americana de enfermagem*, *20*(3), 619-628. https://doi.org/10.1590/s0104-11692012000300026

Hürny, C., Bernhard, J., Bacchi, M., van Wegberg, B., Tomamichel, M., Spek, U., ... & Senn, H. J. (1993). The Perceived Adjustment to Chronic Illness Scale (PACIS): a global indicator of coping for operable breast cancer patients in clinical trials. *Supportive Care in Cancer*, *1*(4), 200-208. https://doi.org/10.1007/BF00366447

Jacobson, E. H. K., Wilson, K. G., Kurz, A. S., & Kellum, K. K. (2018). Examining self-compassion in romantic relationships. *Journal of Contextual Behavioral Science*, *8*, 69-73. https://doi.org/10.1016/j.jcbs.2018.04.003

Kaptein, A. A., Scharloo, M., Helder, D. I., Kleijn, W. C., van Korlaar, I. M., & Woertman, M. (2003). Representations of chronic illnesses. *The self-regulation of health and illness behaviour.* 97-118.

Keyes, C. L. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of health and social behavior*, 207-222. https://doi.org/10.2307/3090197

Kreienberg, R., Volm, T., & Alt, D. (2006). Krankheitsbild: Mammakarzinom. In *Management des Mammakarzinoms* (pp. 69-71). Springer. https://doi.org/10.1007/978-3-540-31748-7_11

López, A., Sanderman, R., Ranchor, A. V., & Schroevers, M. J. (2018). Compassion for others and self-compassion: Levels, correlates, and relationship with psychological well-being. *Mindfulness*, *9*(1), 325-331. https://doi.org/10.1007/s12671-017-0777-z

Lovestone, S., & Fahy, T. (1991). Psychological factors in breast cancer. *BMJ: British Medical Journal*, *302*(6787), 1219. https://doi.org/10.1136/bmj.302.6787.1219

Lund, R., Due, P., Modvig, J., Holstein, B. E., Damsgaard, M. T., & Andersen, P. K. (2002). Cohabitation and marital status as predictors of mortality an eight year follow-up

study. *Social science & medicine*, *55*(4), 673-679. https://doi.org/10.1016/S0277-9536(01)00219-2

Lupton, D. (1994). Femininity, responsibility, and the technological imperative: discourses on breast cancer in the Australian press. *International Journal of Health Services*, *24*(1), 73-89. https://doi.org/10.2190/1B6J-1P5R-AXCR-MRNY

Mackintosh, K., Power, K., Schwannauer, M., & Chan, S. W. (2018). The relationships between self-compassion, attachment and interpersonal problems in clinical patients with mixed anxiety and depression and emotional distress. *Mindfulness*, *9*(3), 961-971. https://doi.org/10.1007/s12671-017-0835-6

Mattsson, E., Ringner, A., Ljungman, G., & von Essen, L. (2007). Positive and negative consequences with regard to cancer during adolescence. Experiences two years after diagnosis. Psycho-Oncology, 16, 1003-1009. https://doi.org/10.1002/pon.1162

Mehl, M. R., Vazire, S., Holleran, S. E., & Clark, C. S. (2010). Eavesdropping on happiness: Well-being is related to having less small talk and more substantive conversations. *Psychological science*, *21*(4), 539-541. https://doi.org/10.1177/0956797610362675

Montero-Marin, J., Kuyken, W., Crane, C., Gu, J., Baer, R., Al-Awamleh, A. A., ... & García-Campayo, J. (2018). Self-Compassion and cultural values: a cross-cultural study of Self-Compassion using a Multitrait-Multimethod (MTMM) analytical procedure. *Frontiers in psychology*, *9*, 2638. https://doi.org/10.3389/fpsyg.2018.02638

Negi, L.T. (2013). Emory Compassion Meditation Protocol: Cognitively-Based Compassion Training Manual.

Neff, K. (2003a). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and identity*, *2*(2), 85-101. https://doi.org/10.1080/15298860309032

Neff, K. D. (2003b). The development and validation of a scale to measure self-compassion. *Self and identity*, *2*(3), 223-250. https://doi.org/10.1080/15298860309027

Neff, K. D., & McGehee, P. (2010). Self-compassion and psychological resilience among adolescents and young adults. *Self and identity*, *9*(3), 225-240. https://doi.org/10.1080/15298860902979307

Neff, K. D. (2016). The Self-Compassion Scale is a Valid and Theoretically Coherent Measure of Self-Compassion. *Mindfulness, 7*(1), 264-274. https://doi.org/10.1007/s12671-015-

0479-3

Neff, K. D., & Tóth-Király, I. (2020). Self-Compassion Scale (SCS). https://self-compassion.org/wp-content/uploads/2020/02/Chapter-36-Neff-et-al-self-compassion-in-press.pdf

Olshansky, S. J., & Ault, A. B. (1986). The fourth stage of the epidemiologic transition: the age of delayed degenerative diseases. *The Milbank Quarterly*, 355-391. https://doi.org/10.2307/3350025

Perelli-Harris, B., & Styrc, M. (2018). Mental well-being differences in cohabitation and marriage: The role of childhood selection. *Journal of Marriage and Family*, *80*(1), 239-255. https://doi.org/10.1111/jomf.12431

Psychotherapie. Klinik Ostseeblick - Psychotherapie. (n.d.). https://ostseeblick.deutsche-rentenversicherung-reha-zentren.de/subsites/Ostseeblick/de/Navigation/02_WasWirFuerSieLeisten/WasWirFuerSieLeisten_node.html

Purdie, F., & Morley, S. (2016). Compassion and chronic pain. *Pain*, *157*(12), 2625-2627. https://doi.org/10.1097/j.pain.0000000000000638

Przezdziecki, A., Sherman, K. A., Baillie, A., Taylor, A., Foley, E., & Stalgis-Bilinski, K. (2013). My changed body: breast cancer, body image, distress and self-compassion. *Psycho-oncology*, *22*(8), 1872-1879. https://doi.org/10.1002/pon.3230

Pyszkowska, A. (2020). Personality predictors of self-compassion, ego-resiliency and psychological flexibility in the context of quality of life. *Personality and Individual Differences*, *161*, 109932. https://doi.org/10.1016/j.paid.2020.109932

Tripathi, R. C., Caplan, R. D., & Naidu, R. K. (1986). Accepting advice: A modifier of social support's effect on well-being. *Journal of Social and Personal Relationships*, *3*(2), 213-228. https://doi.org/10.1177/0265407586032006

Raes, F., Pommier, E., Neff, K. D., & Van Gucht, D. (2011). Construction and factorial validation of a short form of the self-compassion scale. *Clinical Psychology & Psychotherapy*, *18*(3), 250-255.

Rook, K. S. (1984). The negative side of social interaction: impact on psychological well-being. *Journal of personality and social psychology*, *46*(5), 1097. https://doi.org/10.1037/0022- 3514.46.5.1097

Schaeffer, D., & Haslbeck, J. (2016). Bewältigung chronischer Krankheit. In *Soziologie von Gesundheit und Krankheit* (pp. 243-256). Springer VS. https://doi.org/10.1007/978-3-658-11010-9_16

Schober, P., Boer, C., & Schwarte, L. A. (2018). Correlation coefficients: appropriate use and interpretation. *Anesthesia & Analgesia*, *126*(5), 1763-1768. https://doi.org/10.1213/ANE.0000000000002864

Soons, J. P., & Kalmijn, M. (2009). Is marriage more than cohabitation? Well-being differences in 30 European countries. *Journal of Marriage and Family*, *71*(5), 1141-1157. https://doi.org/10.1111/j.1741-3737.2009.00660.x

Urcuyo, K. R., Boyers, A. E., Carver, C. S., & Antoni, M. H. (2005). Finding benefit in breast cancer: Relations with personality, coping, and concurrent well-being. *Psychology & Health*, *20*(2), 175-192. https://doi.org/10.1080/08870440512331317634

Ursachi, G., Horodnic, I. A., & Zait, A. (2015). How reliable are measurement scales? External factors with indirect influence on reliability estimators. *Procedia Economics and Finance*, *20*, 679-686. https://doi.org/10.1016/S2212-5671(15)00123-9

Van Den Bos, G. A. (1995). The burden of chronic diseases in terms of disability, use of health care and healthy life expectancies. *The European Journal of Public Health*, *5*(1), 29-34. https://doi.org/10.1093/eurpub/5.1.29

Verbrugge, L. M., & Patrick, D. L. (1995). Seven chronic conditions: their impact on US adults' activity levels and use of medical services. *American journal of public Health*, *85*(2), 173-182. https://doi.org/10.2105/AJPH.85.2.173

Vlierberghe, M. (2019). Self-Critique and Self-Compassion Among Breast Cancer Patients. https://essay.utwente.nl/79965/

Volkov, N. (2020). Development and First Validation of a Self- Compassion and Self-Criticism Scale for Patients with Chronic and Life-Threatening Physical Conditions. http://purl.utwente.nl/essays/83372

Wang, L. (2017). Early diagnosis of breast cancer. *Sensors*, *17*(7), 1572. https://doi.org/10.3390/s17071572

Appendix

Chronic Condition
We would like to ask you to answer several questions about your specific health condition. When answering, please focus on the condition with which you identify yourself most with.

What condition do you have? If you have several chronic conditions, please indicate the one that is the most relevant for you.

_____

How long ago have you been diagnosed with your condition?
- Less than 6 months ago
- Less than 1 year ago
- Between 1 and 5 years ago
- Between 5 and 10 years ago
- More than 10 years ago

Are you currently under treatment for your condition?
- Yes, I am prescribed medication or other medical treatments
- Yes, I am prescribed lifestyle restrictions
- No

Please rate your health-related quality of life on a scale from 0-100, where 0 signifies health-related quality of life associated with death, and 100 signifies perfect health.

0 - ------10--------20-----30-------40--------50--------60--------70-------80--------90------100

Please tick the characteristic(s) of your health condition that seem most appropriate to you.
My chronic condition is…
- Not visible
- Visible, but only under certain circumstances (e.g. when I go to the beach)
- Always, or nearly always visible

To what extent does your condition limit you in your…
…social functioning/roles?
- Not at all
- A lot of the time
- All the time

Demographic data
People from all kinds of backgrounds suffer chronic illnesses. We would like to ask you about your background, so that we know if we are missing some people from certain backgrounds. Please answer with the facts that match your current characteristics.

How old are you?

___

What gender do you identify with?

Female
Male
I identify as____

What is the highest education level you have completed?

Elementary school (1)
10th grade (2)
Apprenticeship (3)
College (3)
University (3)
Prefer not to say (4)

Do you have a migration background? Thus, are you or one of your parents born in another country? (You are not required to answer)

Yes, Western (e.g. UK, Poland) (2)
Yes, Non-Western (e.g. Turkey, Marokko) (2)
No, both my parents and I were born in Germany/ The Netherlands (1)
Prefer not to say (3)

Current living and social situation

In order to obtain a better understanding of the connection between your social environment and self-compassion, we will end this survey with some questions about your current living and social situation.

What is your current marital/relationship status?

Single (1)
Living with a partner in a committed relationship (2)
In a serious relationship, but not living together (2)
Married (2)
Divorced or widowed (1)
Prefer not to say (3)

Which of the following best describes your living situation?

Live alone in my own home (may have a pet) (1)
Live in a household with other people (2)
Live in a residential facility where meals and household are or could be routinely provided by paid staff (1)
Staying with a relative or friend (2)

Living with children (2)
Other (3)
Prefer not to say (3)

How often do you see or talk to people you care about and feel close to? (For example, talking to friends on the phone, visiting friends and family)
Less than once a week (1)
1-2 days a week (2)
3-4 days a week (3)
5 or more days a week (3)
Prefer not to say (4)