



BACHELOR THESIS

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In which way are strengths used by cancer survivors to self-manage their problems in order to maintain and increase their well-being



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Abstract

Background

Cancer survivors still perceive psychological and physical consequences resulting from their treatment. These consequences affect their overall well-being also known as quality of life. In order to manage these problems, self-management strategies can be used to live well with their condition. The usage of self-management strategies can be based on different strengths, which are used by cancer survivors to engage in resilience. When considering these, they can be divided into internal and external strengths. Currently, there is no direct literature known about the use of self-management strategies and strengths by cancer survivors. Therefore, this study aims to research “In which way do cancer survivors use their strengths to self-manage their problems in order to maintain or increase their well-being.”

Methods

In order to gain insight into the two domains, ten cancer survivors, gained through convenience and snowball sampling, were interviewed with a semi-structured interview. The interview focused both on self-management strategies and strengths used during their time as survivors. The interviews were transcribed, and a coding scheme based on deductive and inductive approaches was created.

Results

After conducting the analysis, a total of 16 different strategies, internal and external strengths were identified. The most frequent self-management strategies were being active and exercise regularly and planning and prioritising. These strategies were highly connected to the use of internal strengths. There, being active, reconciling oneself with the situation or having knowledge and insight helped using these strategies but were also used on their own. Furthermore, are supportive relationships and spending time in the nature the most frequent external strengths, which helped to increase the cancer survivor’s well-being.

Conclusion

This study emphasised that cancer survivors used self-management strategies and strengths in order to increase or maintain their well-being. Strengths were either used as foundation for self-management strategies or used as source to engage into resilience by itself. Both strengths and self-management strategies, were used to self-manage physical or psychological problems.

Introduction

Cancer is one of the leading causes of death worldwide, but the amount of cancer survivors is also increasing daily. Due to improvements in both prognosis and treatment, half of the newly diagnosed cancer patients will become survivors or will efficaciously recover. Nonetheless, even when someone is considered as cancer survivor, it does not mean that the person evaluates oneself as healthy (Taskilla, Lindbohm, 2007; Zucca et al., 2010). Considering a study measuring the quality of life of cancer survivors, it shows that they do score higher in quality of life compared to their time as patient. However, it also indicates that survivors are still facing different problems that can affect their way of functioning. Those can manifest in either physical or psychological way (Ferrel, Dow, 1997; Zebrack, 2000). For instances do cancer survivor report several late physical effects, like a lack of stamina, or pain and fatigue resulting from treatment. These consequences impair the way of function and decrease the well-being of survivors. Highly connected to those physical consequences are the psychological ones. The fear of recurrence or general anxiety is increasing when perceiving physical symptoms similar to cancer symptoms. Therefore, these problems are affecting the survivor's well-being, which results in a decreased quality of life over time (Ferrel, Dow, 1997; Zeltzer et al., 2008).

In order to manage the hinderances that inflict with their well-being, self-management strategies can be used to sustain or increase one's well-being (Zucca et al., 2010). In general, self-management describes the ability to engage into health-promoting behaviour. These can be identified as managing different consequences to live, adapt or change towards these perceived challenges from cancer survivors. In order to obtain those self-management strategies, do cancer survivors need a high amount of learning about the problems and management towards the demands (Lorig, Holman, 2003). After getting insight towards one condition, strategies like exercising, seeking support, goal setting and planning and pacing can be used to engage into health behaviour. These strategies, for instance, can be used to manage either medical aspects, managing life changes, or psychological and physical consequences of the survivors. While using these strategies, do cancer survivors try to change the maladaptive perspective of the consequences into a more positive one. Each strategy can work both independent from and intertwined with each other. The use of self-management strategies enables the survivor to achieve own goals at all phases along with their survivorship. Further, it should increase the overall quality of life and decrease the perception of problems among cancer survivors (Fenlon, Khambhaita, Hunter, 2015; Kristjansdottir et al., 2018 McCorkle et al., 2011).

Another important part of self-management strategies is the cooperation with another party. The involvement of partnership should enable and empower the survivor to achieve their own goals. In general, a partnership is mostly formed among health care providers, patients and families. The interaction between these parties should facilitate the patients support to manage and cope with their problems (McCorkle et al., 2011). For instance, a lack of knowledge or power of the cancer survivors may be a hindering factor to use their strategies efficiently. There, a second party can become an efficacious catalyst to help the patient to become more conscious of the importance of life (Kristjansdottir et al., 2018).

Unfortunately, there are no general studies regarding the effect of self-management strategies among cancer survivors. However, studies that did address cancer patients and chronic illness patients indicated positive results when using self-management strategies. The study about breast cancer patients indicated that participants demonstrate an increased level of health behaviour, self-help and psychological adjustment after using self-management strategies (Braden et al., 1998). Further, the study regarding chronic illness patients emphasised an increased health behaviour and increased quality of life after using different self-management strategies (Kristjansdottir et al., 2018). Both studies also indicated a decreased perception of problems resulting through their disease. The effect of these studies indicated an increased well-being of both groups. Furthermore, they were able to cope with either physical or psychological problems, when using self-management strategies (Braden et al., 1998; Kristjansdottir et al., 2018).

When using self-management strategies, a repertoire of potentials, also known as health assets, is necessary. These health assets are the foundation of self-management strategies. An example of health assets as foundation for a self-management strategy can be used by planning and pacing. There, resources like persistence, acceptance and knowledge were identified as important to use the strategy (Kristjansdottir et al., 2018). These can be described as potentials an individual possess in order to develop or change. Further, they are inherited in every person but not necessarily used by them. The development and use of health assets highly depend on the physical and psychological condition of the individual in combination with the surrounding (Rotegård et al., 2010).

The World Health Organisation and Positive Psychology movement recognised health assets as strengths that are used by patients to increase their well-being and cope with their problems (Rotegård et al., 2010). In general, strengths can be defined as personal qualities which are integrated into different approaches, like self-management strategies, to obtain and maintain well-being. Thus, strengths can desirably alter and influence health behaviour and

management of problems (Rotegård et al., 2012). Furthermore, strengths are one of the core pillars of the positive psychology domain which focuses on the development of the human's positive side. They are used to seek for optimal functioning and increased perceived well-being. Strengths also promote resilience and the capacity of good living (Casellas-Grau, Font, Vives, 2013; Rashid, 2014).

When assessing strengths, two different domains become visible known as internal and external strengths (Rotegård et al., 2012). Internal strengths are personal qualities rooted in the person himself. These are resources that are based on their own characteristics or power. They can manifest as, for example, optimism, perceived happiness or acceptance. In contrary, external ones are based on supportive relationships like family or support from others, like healthcare providers. Using these type of strengths nurtures into resilience and a successful adaption towards the individual condition (Kristjansdottir et al., 2018; Rotegård et al., 2012).

Like self-management strategies, there is no direct literature investigating strengths and their effect on cancer survivors. However, a study focusing on cancer patients identified several internal strengths. Strengths like mindfulness, willpower, knowledge and skills, or commitment towards the goal helped the patients to increase their well-being and focus on their goal to become healthy. Furthermore, the study emphasised the importance of external strengths in form of healthcare providers and family and friends. The overall usage of strengths helped the participants to manage their problems and enabled health-related behaviour (Kristjansdottir et al., 2018; Rotegård et al. 2012). This study showed the importance of strengths used by cancer patients. Therefore, similar results could be expected for cancer survivors.

The importance of strengths and self-management strategies to engage into resilience and health behaviour was emphasised by different studies of cancer patients and patients with chronic illness. However, healthcare providers still have the tendency to neglect the importance of strengths of cancer survivors to cope with their physical or psychological problems due to a less frequent encounter (Ferrel, Dow, 1997; Rotegård et al., 2012). Therefore, this study aims to get insight into strengths and self-management strategies used by cancer survivors to increase their well-being. Based on the aim of the study, the following research question is formulated: *“In which way are strengths used by cancer survivor to self-manage their problems in order to maintain or increase their well-being?”*

Methods

Participants

The study was conducted in 2019 and focused on the strengths of cancer survivors after they successfully beat their disease. The inclusion criteria in order to participate were that the respondents had to be older than 18 years. Furthermore, they had to be evaluated as cancer free in order to take part in this study.

In total, six woman and four men were interviewed. The age of the participants ranged from 51 to 64 years, with a mean of 56 years. All ten participants were from Germany. The treatment of their disease ended at least two years prior to the interview without any reversions. In total six of the ten participants had breast cancer, all of them were women. Two of the male participants had colon cancer. The other male participants had prostate cancer and the last one had vocal cord cancer. The demographics of the participants can be seen in Table 1.

Table 1. *Demographics and background details of participants*

Characteristics		N
Gender	Male	4
	Female	6
Age	Mean	56
	Range in years	51-64
Nationality	German	10
Type of cancer	Breast cancer	6
	Colon cancer	2
	Prostate cancer	1
	Vocal cord cancer	1

Interview

An extensive interview scheme (Appendix I) was used to gain insight into the life of the survivors. The interview was semi-structured and focused on two domains of a person's life. The first domain focused on the time as cancer patient. There, questions related to their disease and treatment were asked. Furthermore, questions about their self-management strategies and strengths were asked. The second domain focused on their time as a survivor. There, the clients answered questions about possible consequences resulting through the disease and how these affected their daily life. Then questions were asked about how they managed all these stressors and what strengths they were using.

For each main question, several sub-questions were used in order to get the most important information that is necessary for this study. A question such as "*What especially helped you? What would you describe as your biggest strength or resource?*" were used to assess the strengths of the clients during their treatment and recovery. Another question focused on strategies that helped the interviewees during their treatment "*Did you have so-called self-management strategies that helped you coping with your illness?*" With the help of these questions, information about strengths and strategies during their time as a patient and after the time were assessed. This should give some hints about what helped them during their time as a patient but also after the time as a survivor.

Procedure

Before the actual sampling started, this project needed approval from the ethical committee of the University of Twente. The ethical committee approved the purpose of the study and the actual sampling started.

In order to gain participants for this interview study, convenience sampling was conducted. With the help of family and friends from the researcher, possible participants were found and contacted by the researcher. In total, 13 participants were contacted, ten of them agreed to take part in this study. After they confirmed their participation a short introduction of the topic was given via telephone and an appointment for the interview was arranged. The interviews took place at the client's home and were held face-to-face. Upon arrival for the interview, each participant was asked to sign an informed consent and gained a prescription of the study. The informed consent (Appendix II) consisted of a short explanation about the purpose of the study. Also, some information about possible benefits were mentioned and the confidentiality about the recordings was described. This included that every interview was anonymised after transcribing it and the recordings were deleted after the transcription was

done. Further, it gave some information about the anonymity regarding the information and that no third person will have access to the information. Before the interviews started, the informed consent was discussed and signed by both parties. The participants also gained some insight into the structure of the interview. Furthermore, the researcher explained that the participation is completely free and withdrawal from the interview is possible at any given time without giving a reason. After that, the interviewees were able to ask possible questions. When there were no questions left, the interview started. Each interview was around 30 to 50 minutes long and was recorded with a mobile phone.

Analysis

After conducting all the interviews, each one of them was transcribed verbatim with the help of Microsoft Word. After transcribing all interviews, iterative and systematic steps were taken during the data analysis. Both inductive and deductive approaches were used in order to create a coding scheme. After transcribing the interviews, a content analysis was conducted in order to gain insight into possible strengths and self-management strategies that were mentioned by the cancer survivor (Graneheim, Lundmann, 2004). Based on this analysis, first codes were identified by comparing similar patterns mentioned by the participants. Also, with the aid of different studies that focused on strengths and self-management strategies of cancer patients and chronic illness patients, information about further possible strengths were identified by comparing these to the identified strengths from the interviews (Kristjansdottir et al., 2018; Rotegard et al., 2010). Furthermore, some information was considered in a different perspective after gaining insight from different studies. With the aid of both the inductive and deductive approach, a coding scheme was created. The idea of codes from the two studies were, 1.) being persistent, 2.) experiencing positive emotions, 3.) reconciling oneself with the situation, and 4.) having knowledge and insight for internal strengths. Furthermore, family and friends and health care were described as external strengths by these studies as well. (Kristjansdottir et al., 2018; Rotegard et al., 2010). The other codes for self-management strategies, internal and external strengths were created through the iterative approach. This coding scheme was used on two of the interviews with the Atlas.ti program in the first round. After talking to a supervisor of the University of Twente, some adaption towards phrasing and describing were done. The process of adapting endured until consensus was met. Finalising the coding scheme, a total of 16 codes were created (Appendix III). Four of the codes belong to self-management strategies, eight codes to

internal strengths and four codes to external strengths. The four codes for self-management strategies are: 1) being active and exercise regularly, 2) planning and prioritising, 3) breathing exercise and 4) meditation. Codes for internal strengths are: 5) being optimistic, 6) being persistent, 7) experiencing positive emotions, 8) being active, 9) reconciling oneself with the situation, 10) having knowledge and insight, 11) setting small goals, 12) taking care of oneself. The final codes for external strengths are: 13) supportive relationships, 14) spending time in nature, 15) support from workplace 16) support from health-care providers. This coding scheme was used for all ten interviews.

Result section

After conducting the analysis, 16 different self-management strategies, internal and external strengths were identified to answer the research question in which way do cancer survivors use strengths to self-manage their problems in order to maintain and increase their well-being. Some codes, especially for internal strengths, have a higher value compared to other ones. Therefore, the most important and occurring strengths are mentioned first.

The following sections are containing the name of each code with a short definition gained from the insights of the participants. Furthermore, Tables 2, 3 and 4 are also listing the frequency and quotations from the respondents regarding self-management strategies, internal strengths and external strengths. An extended version of the tables can be found in Appendix IV.

Self-management strategies

Based on the interviews, certain self-management strategies were mentioned by the interviewees (Table 2). These strategies helped them to manage physical or psychological problems resulting from their treatment. With the aid of these self-management strategies, an increased well-being is reached according to the participants.

All respondents explained that being active and exercise regularly was the most important strategy to increase their physical state. Especially shortly after the treatment, the clients felt weak and had no stamina to be efficient. In order to increase their situation, they started to be active or did different exercises to get back in shape and feel well again. Furthermore, other exercises like music or drawing helped five of the respondents to increase their psychological well-being to gain other thoughts or clear their mind.

The second strategy that was mentioned by nine of the ten clients was planning and prioritising. Due to a lack of stamina, the clients were not in the shape to attend to every appointment they had. In order to manage this, they started planning and prioritising their day and attended to the appointments that were important for them. When they had too many appointments, they asked themselves what they were capable of doing and prioritised certain meetings. The others, that were not important enough or where the clients did not have the stamina to endure, were cancelled. This helped the client to create a feeling of what they were able to do and assess their current well-being.

Another strategy that was used by the six female participants was breathing exercises. The woman used it to gain control and calmness through breathing in order to gain control of negative thoughts and avoid panic. Especially when facing negative experiences regarding

their disease, breathing exercises helped to manage the psychological problems of the survivors.

The final strategy that was used by four participants was meditation. When the survivors faced negative thoughts, they sat down and started to meditate. This helped them to clear their mind and lose their worries for a certain time.

Table 2. *Self-management strategies mentioned by the respondents*

Self-management strategy	Definition	Frequency N	Quotation
Being active and exercise regularly	Being active and exercise helped to get a clear mind and benefited with a better physical state	28	<p>“I went to the gym for more than five years after my treatment. I just wanted to get fit and limber again.” (Respondent 1)</p> <p>“Playing some music helped me to clear my mind when I experienced negative thoughts.” (Respondent 4)</p>
Planning and prioritising	Setting a plan in the morning about certain things one want do to and prioritise the most important things for oneself	15	<p>“I started my day by looking on my calendar. I asked myself what I am capable of doing and started my day. (...) When I was not able to do it, I stopped.” (Respondent 1)</p> <p>“It took some time to be capable of doing everything, which was in my calendar. (...) In the beginning, I started prioritizing certain things, but this also changed over time.</p>
Breathing exercise	Controlled and calm breathing to gain control of negative thoughts and avoid panic	9	<p>“When I was scared of recurrence or felt back into a loop of negative thoughts, I sat down and started breathing as I learned in the hospital.” (Respondent 5)</p> <p>“I started breathing regularly when I thought about my disease. It really helped me to calm down.” (Respondent 1)</p>
Meditation	When facing negative thoughts sitting down and meditate, helped to gain a clear mind	5	<p>“I sat down in my chair and just started to meditate. (...) I started to visualise myself in a different world, which helped me to forget my worries for a few minutes” (Respondent 5)</p> <p>“Meditation helped me to lose my worries. (...) During that time I just do not have these negative thoughts.” (Respondent 7)</p>

Internal Strengths

Related to the self-management strategies, certain internal strengths (Table 3) were also identified that can be, to a certain extent, considered as the foundation for those strategies.

The first and most frequent strengths mentioned by the ten participants was being optimistic. This one emphasises the importance of a positive attitude and a certain self-confidence to get back into their lives. This was very important for the respondents because their life was disturbed by their disease. Furthermore, they tried to keep positive thoughts and focus on those while trying to disregard negative ones. In order to gain optimism, different things were mentioned. One of the most frequent points was a certain self-confidence that they will be able to get back into their life. This self-confidence was mentioned by all respondents and was gained by their will to go past their time as a patient. They associate their time as a patient only with negative thoughts and the fear of death. Therefore, they try to leave that time in the past and try to get back into their life before the disease occurred. Furthermore, they described it as a loop. When gaining positive thoughts, it became easier to stay optimistic and go on with their daily routine.

Another strength was being persistent which focused on the drive to not give up and adapt to the physical and mental consequences resulting from their illness. After beating cancer, all participants experienced physical or mental limitations. These often influenced their daily routine and limited them regarding their everyday life. Still, all respondents explained that it was important for them to go on and do not suffer too much from those limitations. In order to go on, they described a process of learning and adaption towards their limitation. This means that when facing physical impairments, they tried to learn and adapt, so the limitations did not influence their life too much. Especially for physical limitations, it was hard to accept these in the beginning. Still, the drive to go on and let the disease in their past was one major strength for the respondents.

Experiencing positive emotions was another strength that helped all respondents. They described during their treatment, that they were limited in eating and doing activities. During that time, they realised how important all those small things are. After the treatment, the interviewees started to enjoy these different things in their life again. Especially those that were considered as standard before but also other pleasures that they could not perceive during their treatment. They learned what is important for them in their lives and saw it in a completely different perspective. After the treatment, respondents saw experiencing positive emotions as a source of positive thoughts. Especially being able to exercise or just spend time

with family and friends was mentioned as most important.

Another important strength mentioned by the participants was being active. This helped them coping their everyday life and gaining positive thoughts. In general, they started spending more time outside and doing things that helped them getting fit or clearing their mind. These activities were mostly described as being physically active. Still, some respondents also mentioned that playing music or reading books helped them mentally as well. In total, all respondents mentioned activities that helped them gaining positive thoughts and started feeling physically active.

Reconciling oneself with the situation was another strength mentioned by the respondents. This means that after the treatment, one needs to adapt to the limitations and accept the disease and consequences as part of their life. Six of the respondents asked themselves why they had to go through such a hard time. They were denying their consequences and struggled to accept those. Still, after facing these consequences and realise that they could have experienced even worse consequences, they started to change their mindset.

The next strength is having knowledge and insight about their disease and the consequences, which helped the respondent processing their experiences. More concrete about what happened during their treatment and how it affected their body. Furthermore, how to handle these consequences but also acting to avoid remission. Each participant was well informed about their condition and how to react towards it. Having knowledge about their condition was important for every respondent. Furthermore, gaining insight into what happened to their body after the treatment was done. The severe interventions in form of operation, chemotherapy or radiation treatment did show certain consequences. For six respondents it took some time to accept those limitations resulting from the treatment. It helped them to realise that other patients were not that lucky to survive. Moreover, combining the knowledge and insight to counteract towards the condition was also mentioned by the respondents.

Setting small goals was another important strategy to manage their everyday life according to seven of the respondents. They mentioned that they suffered from fatigue after their treatment. In order to cope with this tiredness, they started setting small goals to get fit again. Furthermore, planning their day was an important strategy for all respondents as well. Accomplishing these small tasks helped them gaining positive thoughts.

The final one for internal strengths is taking care of oneself. This strength can be described as when one does not feel well, they mainly care for themselves and cancel

appointments when necessary. Six respondents described that they started the day by looking at their calendar. When facing a full day, they start to prioritise each appointment and often went to the most important one. When they do not feel well at one point, they stop and do not go to the other ones because they started taking care of themselves. They do not force them into a situation they do not want to be, which was not the case before their disease. This helps them avoid a bad state and negative thoughts.

Table 3. *Internal strengths mentioned by the participants*

Internal strengths	Definition	Frequency N	Quotation
Being optimistic	Being optimistic and self-confident to get back into life	42	<p>“The more often I got positive news that it did not come back, the easier it was to go on” (Respondent 1)</p> <p>“My self-confidence helped me to clear my thoughts and get back into my job. (...) I knew that I was able to stand firm after I managed to beat cancer.” (Respondent 4)</p>
Being persistent	The drive not to give up and live with the physical and mental consequences resulting from the illness	35	<p>“I was determined to get healthy again, I wanted to show everyone that I am not that weak” (Respondent 1)</p> <p>“I had to stop working at home, which was very hard for me mentally because I felt useless. (...) But I learned to live with it and I found other ways to be productive and support my family.” (Respondent 2)</p>
Experiencing positive emotions	After the time of treatment, the participants enjoyed the small things that were considered as standard before.	34	<p>“Just realising that life, in general, is not self-evidential made me realise that enjoying the small things like spending time with the people you love, is the most important thing.” (Respondent 5)</p> <p>“I just started enjoying things like food in a completely different way, which was not possible during the treatment and which I was not aware of before. (...) I am starting to eat things what I feel like I Want to eat right now and this makes me happy and gives me a good feeling.” (Respondent 2)</p>
Being active	Start spending more time outside and doing things that helped them getting fit or clearing their mind.	28	<p>“Shortly after surgery I started walking the stairs up and down and went down the hallway in order to feel better.” (Respondent 6)</p> <p>“I often went out for a walk or by bike in order to get fit again and clear my mind.” (Respondent 3)</p>

Internal strengths	Definition	Frequency N	Quotation
Reconciling oneself with the situation	After the treatment was done, one needs to adapt towards certain limitations and accept the disease or consequences as part of their life	26	<p>“I know that I am prone to cancer due to my family history, therefore I go to check-ups every year. (...) If it is coming back, I cannot change it but I can try to give me the best chance possible.” (Respondent 3)</p> <p>“Since I was diagnosed with cancer, I was shocked and did not want to accept it. (...) After some time, I accepted the condition and learned from it. (...) I started listening to my body in a different way to avoid remission.” (Respondent 5)</p>
Having knowledge and insight	Having knowledge and insight about what happened during treatment and what type of consequences are resulting from it but also how to act towards these consequences	. 22	<p>“My treatment was a long time ago and they did several things different as they would do today. They removed several lymph nodes, which they would not do today. This still affects me. (...) I needed to inform myself to counteract towards this problem.” (Respondent 2)</p> <p>“Even if you know that this saved your life, you suffer mentally from it because you miss something. It is an important part of a woman. (...) I had to learn that this was an important trade for my life. This took time.” (Respondent 2)</p>
Setting small goals	Setting small goals, especially after the treatment, in order to get back into daily life.	20	<p>“Direct after treatment, I started to set small goals that I wanted to reach. (...) When I looked at my calendar, I did the tasks that I thought I was able to do. (...) when I felt that I was not able to do it, I cancelled the appointment. (...) From week to week I felt improvement and accomplishments.” (Respondent 8)</p> <p>“I felt very weak after the surgery, so I started setting small goals like walking the stairs up and down to get fit again. Every day I tried to be better than the day before.” (Respondent 3)</p>

Internal strengths	Definition	Frequency N	Quotation
Taking care of oneself	When one did not feel well, they mainly cared for themselves and cancelled appointments when necessary	18	<p>“When I did not feel like I want to do it, I just did not go.” (Respondent 10)</p> <p>“During treatment, I realised that I have to take more care about myself. This is something I still do, even if the others cannot fully understand it.” (Respondent 10)</p>

External Strengths

Besides internal strengths, some external strengths (Table 4) were also mentioned that helped to manage the consequences of their disease.

The first concept for external strengths is supportive relationships. These are one's relatives and friends that helped them going through the situation but also through rehabilitation and even further. All respondents described that friends and family were the most important external factors. They offered them emotional and physical support. This support helped the respondent to cope with their everyday life and they started to experience positive emotions.

Another one was spending time in nature. This helped eight of the respondents to clear their mind and gave them energy to go through rehabilitation. They explained that spending time in their own garden helped them gaining positive thoughts because they see how life is created.

The third external strength is support from the workplace. This concept focuses on the positive experiences they gained from their workplace to go back into their job and feel healthy again. Especially the understanding of colleagues and boss is mentioned by seven of the respondents as an important criterion. Their working environment took care of them and helped them when they were not able to finish their tasks due to tiredness. This understanding and supporting created positive experiences by the respondents.

The final external strength is support from health-care providers mentioned by five respondents. This means that even after the treatment, did the doctors and nurses helped the respondents to take the anxiety of remission away and helped them during the rehabilitation. The respondents mostly explained this through the empathy of the doctor and nursing team. Also being able to speak to a third person about their problems did help them cope with their negative thoughts.

Table 4. *External Strengths mentioned by the participants*

External strengths	Definition	Frequency	Quotation
Supportive Relationships	One's relatives and friends that helped them through the situation and supported them as good as possible	52	<p>"I am very thankful that my family and friends are that supportive. (...) Especially after the treatment they really take care of me when I overdid myself again." (Respondent 2)</p> <p>"Due to the consequences through the treatment, I am not able to work at home as I did before. (...) I am very thankful that my husband and children took care of it." (Respondent 8)</p>
Spending time in nature	Spending time in nature helped to clear their thoughts and gave them energy to go through rehabilitation	32	<p>"When I started getting negative thoughts and got scared about remission, I stopped everything and went through a forest. This helped to clear my mind and I was able to go on with my tasks." (Respondent 5)</p> <p>"One of my favourite tasks during rehabilitation was spending time in my garden. Even if it was for 15 minutes it just gave me power to go on." (Respondent 8)</p>
Support from workplace	After the treatment is done, the workplace supported one to go back to their job after they feel healthy enough	24	<p>"My boss was very supportive and gave me all the time to get back to work again. (...) Getting back to my job really helped me to go on mentally." (Respondent 10)</p> <p>"After I told my boss about my condition, she supported me totally. When I was done with my treatment, he trained me to go back to my job again." (Respondent 8)</p>
Support from health-care providers	Even after the treatment was done, did the doctor helped to take the anxiety of remission away and helped during the rehabilitation.	18	<p>"I was always scared to go to the doctor afterwards, but after I changed my doctor, he told me something that took my anxiety fully away." (Respondent 1)</p> <p>"Before, during and after the treatment I felt safe and well because I fully trust the doctor. This also helps to go on after the treatment." (Respondent 3)</p>

Discussion

The aim of this study was to find out in which way cancer survivors use their strengths to self-manage their problems in order to maintain and increase their well-being. Based on the findings, it became visible that every participant was able to mention self-management strategies and strengths. These helped them managing certain physical or psychological impairments and increase their well-being.

During the interviews, a set of different self-management strategies were identified. The interviewees described being active and exercise regularly, planning and prioritising, breathing exercise and meditation as important during their survivorship. They mainly helped them to manage directly with either physical or psychological problems. They further explained that they used these strategies to adapt their life towards their condition and engage in further health behaviour. All participants mentioned that exercise regularly, planning and prioritising were the most important ones to manage physical impairments. But they were also increasing the psychological well-being due to increased physical well-being. Breathing exercises and meditation helped managing psychological distress and were mainly used by women during this study.

The importance of self-management strategies to engage into health behaviour was also found in other studies regarding breast cancer patients and chronic illness patients. Chronic illness patient mentioned self-management strategies like health promotion activities, seeking support, goal setting or planning and pacing as very important to engage into health behaviour (Kristjansdottir et al., 2018). Further, breast cancer patient mentioned self-management strategies like relaxation, mindfulness exercises, or general exercising as important (Fenlon et al., 2015). Both studies mentioned an increased engagement into health behaviour of their participants, which resulted in increased well-being (Fenlon et al., 2015; Kristjansdottir et al., 2018). The reason for an increased well-being results through a change of behaviour while using the self-management strategies. The use of those strategies is changing maladaptive behaviour towards a more pleasant one. This behaviour has an impact towards psychological and physical problems and changes the perception towards a more adaptive one (Newman, Steed, Mulligan, 2004).

Comparing the studies, all self-management strategies mentioned, helped either survivor, cancer patients or chronic illness patients to engage into health behaviour or increase their well-being. However, when comparing the strategies of each study, only a few of them seem to be related to each other. One of the major limitations in establishing self-management strategies is the lack of a common language. Several strategies seem to have similar intentions

but are worded differently (McCorkle et al., 2011). For instance, is being active and exercise regularly a similar strategy like health promotion activities. Both strategies are worded differently even if they have similar goals or methods to accomplish those. Further, may health-promoting behaviour include different concepts like a diet. Even if both strategies lead to improvements in health behaviour, is the universality an important factor to increase the effect of self-management strategies even more (McCorkle et al., 2011). Furthermore, makes the universality of self-management strategies them more available towards people with similar conditions and increase the use.

In order to use self-management strategies, a foundation of strengths is necessary. During this study, several internal and external strengths were detected. Considering the internal ones, strengths, like being optimistic, being persistent, experiencing positive emotions, reconciling oneself with the situation, having knowledge and insight, taking care of oneself and setting goals, were mainly used to increase the psychological well-being. Others, like being active and setting small goals, are focusing on physical problems and how they were able to manage those. Nearly all participants used these strengths to maintain or increase their overall well-being. These strengths were used by the participants to increase their well-being and as the foundation for the use of self-management strategies.

Comparing the set of internal strengths from cancer survivor towards studies focusing on chronic illness patient and cancer patients, interesting findings occurred. The study by Kristjansdottir et al. (2018) regarding chronic illness patients identified persistence, positive outlook, kindness towards oneself and others, acceptance, courage, positive emotions and knowledge and insight as important internal strengths. There, a similar foundation of strengths was found compared to this study. When comparing, taking care of oneself and positive outlook from chronic illness patients with kindness towards oneself and being optimistic from cancer survivors, similarities can be identified. Taking care of oneself and kindness towards oneself both focus on an increased resilience perspective of the users, which should help to increase both the physical and psychological condition of the chronic illness patients and cancer survivors. Furthermore, does positive outlook and being optimistic emphasise a more positive mindset towards their condition, which should lead to a more positive psychological perspective (Kristjansdottir et al., 2018). Also, some codes were identical due to the fact that the coding scheme of the chronic-illness study was used during the deductive approach in the data analysis. Another reason for such similarity could be identified when analysing the conditions. Both groups need to manage certain psychological and physical impairments due to their condition. These impairments do influence their overall

well-being to a certain extent but with mobilisation of strengths, they should be able to manage those problems (Ferrel & Dow, 1997; Kristjansdottir et al., 2018). For example, do cancer survivor and chronic illness patients, both perceive their symptoms for a very long period. These can affect the parties both physically but also psychologically. With the aid of strengths like being optimistic, being kind towards oneself or reconcile oneself with the situation should both parties be able to gain more understanding and control towards their situation and therefore increase both their physical and psychological condition (Kristjansdottir et al., 2018).

Cancer patients, in contrast, used a different set of strengths to cope with their problems. There, good mood, mindfulness, willpower, hopes and beliefs, protection, taking action and control were identified as internal strengths (Rotegård et al., 2012). Compared to cancer survivor, taking action and control, good mood and hopes and beliefs from patients can be compared to being active, experiencing positive emotions and being optimistic. Still, even these can not be considered as completely equal. The difference between patients and survivors can be explained by their condition. Cancer itself cannot be treated or cured through strengths. Still, these strengths can be used by cancer patients to increase their chance of recovery and increase their psychological and physical well-being to a certain extent because their condition is more severe compared to survivors. On the other hand, strengths used by survivors increase their well-being and reduce their perceived physical and psychological problems to a larger impact compared to cancer patients (Ferrel, Dow, 1997; Rotegård et al., 2012). Even when the strengths from cancer survivors were not completely in line with strengths from other studies, did they all report an increased resilience and health behaviour (Kristjansdottir et al., 2018; Rotegård et al., 2010; Rotegård et al., 2012).

External strengths were also important for cancer survivor. There, supportive relationships, spending time in nature, support from workplace and support from health-care providers were mentioned as a supportive factor to increase their well-being. Strengths like supportive relationships in form of family and friends or support from health-care providers were commonly mentioned strengths. These strengths were also mentioned by the other studies regarding cancer patients and chronic illness patient (Kristjansdottir et al., 2018; Rotegård et al., 2012). The supportive environment from the participants nurtured resilience and a successful adaption to adversity. Furthermore, their pure presence was already considered as psychological help.

Considering the other two strengths in form of natural environment and support at workplace were not mentioned in other studies as an external one. The support from

workplace could be related to stable socioeconomic status, which was mentioned by chronic ill patients, but it cannot be considered as the same. Socioeconomic status includes more aspects like the individual work experiences, individual economic and social position, while the support from workplace was mainly based on contact towards the colleagues and getting back into a daily routine. The workplace as a strengths can be considered as a part of the socioeconomic status. All cancer survivors referred their job as supportive factor shortly after going back to work. In comparison, cancer patients are not able to work during their illness and cannot use it as an external strength. Chronic illness patients were mostly working and therefore did not perceive work as a new source compared to cancer survivors (Kristjansdottir et al., 2018; Rotegård et al., 2012). Therefore, a certain distinction could be made. The natural environment factor is not relatable to any strengths mentioned by other studies. Furthermore, there is no known source which could support the importance of the natural environment. However, the participants mentioned that spending time was an important source to manage psychological problems during their time of survivorship. It could be possible that other studies did not focus on this factor or did not consider them as important.

As mentioned earlier, both strengths and self-management strategies are improving health-related behaviour and increase the well-being of the individuals (Rotegård et al., 2010). Strengths can work independently or as a foundation for self-management strategies to result into health-related behaviour. This behaviour will ultimately increase the well-being of the individual (Rotegård et al., 2010). The cancer survivors also reported similar improvements when using strengths and self-management strategies. Especially the use of internal and external strengths helped the survivors to cope with psychological and physical problems.

For future studies, the importance of strengths and self-management strategies should not be neglected. Several studies and the domain of positive psychology emphasised the importance of these strategies and strengths. These strengths can work independently but also intertwined within bigger interventions (McCorkle et al., 2011). Another important aspect for future study is to find a universal language for strengths and strategies. Studies of cancer patients, survivors, chronic illness patients and healthy population all showed different strengths and strategies. Even when some similarities were found, a common language is missing. This common language should create a set of universal strengths and strategies that can be used by all domains. This could simplify the use of strengths within different domains and probably increase the effect of self-management and strengths as well (McCorkle et al., 2011; Ryan, Sawin, 2009).

Strengths and limitation

The major strength of this study is the closing gap regarding used self-management strategies and strengths of cancer survivor. When searching for literature, strengths and strategies for different conditions like cancer patients or chronic illness patients were found. However, these were not available for cancer survivors.

Furthermore, this study focused on a highly sensitive topic. Therefore, certain conditions were extended in order to increase the openness of the interviewees. The participants were all from an extended circle of the researcher. So, the respondents already knew the interviewer and were already familiar with him to a certain extent. Also, did the consideration of the severity from each case played a role whether to interview the respondents or not. Conditions which were much more severe and comorbid with other psychological or physical problems were not invited to participate to this study. All participants were in a condition to be interviewed and the likelihood of a breakdown was minimised. These two aspects increased the comfortableness of the respondents and increased the commitment during the interviews.

Some limitations can also be identified in this study. One limitation is related to the researcher itself, who is not a professional interviewer. While transcribing the interviews, certain moments were realised where the interviewer could ask for further information to gain even more insight regarding the strengths. However, even if the researcher did not focus more on the mentioned information, was he still able to identify the mentioned strengths of the respondents.

Another limitation occurred during the interview. Some participants struggled with understanding the term strengths. They did not want to admit that they used certain strengths, because of modesty. However, after explaining them the importance of strengths and how one can use them, they were able to talk more freely about it. Due to their cautious behaviour, did it take some time to get the important information for this study.

Conclusion

This study aimed to show how strengths were used to self-manage the problems of cancer survivors. These strengths were either used independently or as a foundation of self-management strategies. Furthermore, were strengths used to change maladaptive perspective and behaviours into a more adaptive one in order to manage physical and psychological problems and increase resilience.

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Appendix I

Interview Scheme

First of all, welcome and thank you for participating in our study. My name is Stefan Perk, I am 21 years old and I am in my final phase of my Bachelor study in Psychology. The purpose of this interview is assessing the strengths and self-management strategies that you used as your time as cancer patient but also during your current time as cancer survivor in order to cope with the problems resulting from your illness.

In general, strengths can be defined as the basis to integrate different approaches to obtain or maintain well-being. These approaches can be self-management strategies. There are two different types of strengths. The first one is internal strengths. These strengths are based on personal qualities and emotions. Some examples are your fitness level, being persistent, being optimistic or being kind and caring. The other side of strengths are external ones. Those are based on supportive relationships or health care providers. Both types of strengths are necessary to use self-management strategies in order to cope with certain struggles or improve one's overall well-being.

I would like to divide the interview into two parts. The first part will focus on your time as a cancer patient, while the other focus on your current time as cancer survivor. During the interview, I will try to let you speak freely about the topic and will interrupt you as little as possible. If I need some more specific information, I will try to ask these with certain questions.

Before we start, I would like to remind you regarding the information mentioned in the informed consent. This interview will be recorded and transcribed in order to code and analyse your given information. I want to emphasise that all your data will be treated confidentially. The whole data set will be anonymised, and no third person will get access to the data. Furthermore, some of your quotes will be used in the report, but no one will be able to work out, which answers you gave. The interview will take around 30-60 minutes and you can stop the interview at any given time.

- To start the interview, I would like you to introduce yourself.
 - What is your name?
 - How old are you?
 - What is your family status?
 - What is your Employment status?

- Could you give me also some information about your current health status, how do you feel right now?
 - Can you tell me the type of cancer you had?
 - Can you tell me when you were evaluated as cancer free?
 - Do you still have some problems related to your illness?
 - How do you cope with these problems?

When enough information is collected, carefully swap towards their time as patient

- You mentioned before that you had ... type of cancer. Could you maybe tell me when you got diagnosed and a bit about the time after your diagnosis?
 - What was your first reaction?
 - What problems occurred over time?
 - Maybe relate the problems towards physical, mental, social and spiritual problems.
 - How did it affect your life?
 - Did it affect the participant physically, mentally, socially or spiritually?
 - How did the illness develop?
 - Can you tell me something about the treatment? What type of treatment?
 - What helped you during that time?

- You mentioned that certain things helped you cope with your situation. Could you be a bit more specific regarding these?

Maybe refer it a bit towards strengths and self-management strategies?

- What kind of strengths did help you? (If you forgot the definition of internal strengths, I could repeat it.)
 - Internal strengths?
- Did you have help from others?
 - External strengths?
- Did you have so-called self-management strategies that helped you coping with your illness?
 - Did you maybe face this term during your treatment or your treatment?
- What especially helped you? What would you describe as your biggest strength or resource?

When found enough information, stepping to the next part

- You gave a lot of information about your time as a patient. I would now like to focus a bit more on your current health status. You mentioned that you are working again? Could you maybe tell me a bit about the time after the treatment? How did you get back into your life?
 - What things did help you?
 - Taking possible strengths into account
 - What was hard for you?
 - What problems did come up?
 - Mentally, physically, socially, and spiritually
 - Which resources helped you coping with these problems?
 - Mentally, physically, socially and spiritually
- You mentioned that you had some problems. Could you focus a bit more on these problems? Maybe tell me about possible consequences resulting from your illness?
 - What were the main problems?
 - How did these problems affect you?
 - What helped you with these problems?
 - Did you use specific strengths, resources or strategies to cope with these problems?
- Could we focus a bit more on these strengths?
 - What characteristics you mentioned earlier would you describe as very important while coping with these?
 - Which part of your environment was especially important and helpful for you?
 - Did you use these strengths with some strategies?
- Before I end this interview, do you have any additional information that you may forgot during the interview?

I gained a lot of insight with this interview. I am very thankful for this information. I hope it was okay for you as well.

I would like to thank you for participating and if you have any question feel free to ask. You can also contact me anytime you would like to.

Appendix II

Informed Consent

INFORMED CONSENT FORM

Project Title

Strengths of cancer survivors to cope with their everyday life

Purpose of the Study

This research is being conducted by Stefan Perk a Bachelor student of the University of Twente. I am inviting you to participate in this research project about the strengths of cancer survivor to cope with their everyday life. The purpose of this research project is assessing your strengths and certain strategies you are using to cope with your everyday life, after you were successfully evaluated as cancer survivor.

Procedures

You will participate in an interview lasting 30 to 60 minutes. You will be asked questions about your current health status and about current problems occurring from your former cancer illness but also about your time as a cancer patient. After getting insight about your health status, question about strengths and self-management strategies are asked to get insight how you cope and handle the problems mentioned earlier.

Sample questions include: "Could you give me also some information about your current health status, how do you feel right now? Or Could you maybe tell me a bit about the time after the treatment? How did you get back into your life?"

You must be at least 18 years old and must be evaluated as cancer free.

Potential Risks and Discomforts

There are no obvious physical, legal or economic risks associated with participating in this study. Still, it is a sensitive topic and therefore some discomfort might come up while answering questions regarding this topic. You do not have to answer any questions you do not wish to answer. Your participation is voluntary, and you are free to discontinue your participation at any time. Furthermore, a third person close to you can assist during the interview, when personal discomforts are coming up. This should give you a safe environment, to make this interview as comfortable as possible.

Potential Benefits

Participation in this study does not guarantee any beneficial results to you. As a result of participating, you may better understand what resources and strengths you had while coping with your illness and that you are still using to cope with the follow-ups of your disease. The broader goal of this research is to get to know the strengths and self-management strategies of cancer survivors to cope with the consequences after successfully beating cancer.

Confidentiality

Your privacy will be protected to the maximum extent allowable by law. No personally identifiable information will be reported in any research product. Moreover, only trained research staff will have access to your responses. Within these restrictions, the results of this study will be made available to you upon request. At the start of the research, your name will be replaced by a pseudonym; your name will be coded. As indicated above, this research project involves making audio recordings of interviews with you. Transcribed segments from the audio recordings may be used in published forms (e.g., journal articles and book chapters). In the case of publication, pseudonyms will be used. The audio recording will be saved by the researcher and will be destroyed after finishing the study.

Right to Withdraw and Questions

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify. The data you provided before you stopped participating however will be processed in this research; no new data will be collected or used.

If you decide to stop taking part in the study, if you have questions, concerns, or complaints, or if you need to report an injury related to the research, please contact the primary investigator:

s.perk@student.utwente.nl

Statement of Consent

Your signature indicates that you are at least 18 years of age; you have read this consent form or have had it read to you; your questions have been answered to your satisfaction and you

voluntarily agree that you will participate in this research study. You will receive a copy of this signed consent form.

I agree to participate in a research project led by Stefan Perk. The purpose of this document is to specify the terms of my participation in the project through being interviewed.

1. I have been given sufficient information about this research project. The purpose of my participation as an interviewee in this project has been explained to me and is clear.
2. My participation as an interviewee in this project is voluntary. There is no explicit or implicit coercion whatsoever to participate.
3. Participation involves being interviewed by (a) researcher(s) from the University of Twente. The interview will last approximately 30-60 minutes. I allow the researcher(s) to take written notes during the interview. I also may allow the recording (by audio/video tape) of the interview. It is clear to me that in case I do not want the interview to be taped I am at any point of time fully entitled to withdraw from participation.
4. I have the right not to answer any of the questions. If I feel uncomfortable in any way during the interview session, I have the right to withdraw from the interview.
5. I have been given the explicit guarantees that, if I wish so, the researcher will not identify me by name or function in any reports using information obtained from this interview, and that my confidentiality as a participant in this study will remain secure.
6. I have been given the guarantee that this research project has been reviewed and approved by the faculty of Psychology and by the BMS Ethics Committee. For research problems or any other question regarding the research project, the Secretary of the Ethics Commission of the faculty Behavioural, Management and Social Sciences at University Twente may be contacted through ethicscommittee-bms@utwente.nl.
7. I have read and understood the points and statements of this form. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study.
8. I have been given a copy of this consent form co-signed by the interviewer.

Name of Participant

Signature

Date

Name of Researcher

Signature

Date

Appendix III

Coding Scheme

Category	Code	Description
Self-management strategy	Being active and exercise regularly	Being active and exercise helped to get a clear mind and benefited with a better physical state
	Planning and prioritising	Setting a plan in the morning about certain things one want do to and prioritise the most important things for oneself
	Breathing exercise	Controlled and calm breathing to gain control of negative thoughts and avoid panic
	Meditation	When facing negative thoughts sitting down and meditate, helped to gain a clear mind
Internal Strengths	Being optimistic	Being optimistic and self-confident to get back into life
	Being persistent	The drive not to give up and live with the physical and mental consequences resulting from the illness
	Experiencing positive emotions	After the time of treatment, the participants enjoyed the small things that were considered as standard before
	Being active	Start spending more time outside and doing things that helped them getting fit or clearing their mind.
	Reconciling oneself with the situation	After the treatment was done, one needs to adapt towards certain limitations and accept the disease or consequences as part of their life
	Having knowledge and insight	Having knowledge and insight about what happened during treatment and what type of consequences are resulting from it but also how to act towards these consequences
	Setting small goals	Setting small goals, especially after the treatment, in order to get back into daily life.
	Taking care of oneself	When one did not feel well, they mainly cared for themselves and cancelled appointments when necessary
External Strengths	Supportive Relationships	One's relatives and friends that helped them through the situation and supported them as good as possible
	Spending time in nature	Spending time in nature helped to clear their thoughts and gave them energy to go through rehabilitation
	Support from workplace	After the treatment is done, the workplace supported one to go back to their job after they feel healthy enough
	Support from health-care providers	Even after the treatment was done, did the doctor helped to take the anxiety of remission away and helped during the rehabilitation.

Appendix IV

Extended Table of Codes

Self-management strategy	Definition	Frequency N	Quotation
Being active and exercise regularly	Being active and exercise helped to get a clear mind and benefited with a better physical state	28	<p>“I went to the gym for more than five years after my treatment. I just wanted to get fit and limber again.” (Respondent 1)</p> <p>“Playing some music helped me to clear my mind when I experienced negative thoughts.” (Respondent 4)</p>
Planning and prioritising	Setting a plan in the morning about certain things one want do to and prioritise the most important things for oneself	15	<p>“I started my day with looking on my calendar. I asked myself what I am capable of doing and started my day. (...) When I was not able to do it, I stopped.” (Respondent 1)</p> <p>“It took some time to be capable of doing everything, which was in my calendar. (...) In the beginning, I started prioritizing certain things, but this also changed over time.</p>
Breathing exercise	Controlled and calm breathing to gain control of negative thoughts and avoid panic	9	<p>“When I was scared of recurrence or felt back into a loop of negative thoughts, I sat down and started breathing as I learned in the hospital.” (Respondent 5)</p> <p>“I started breathing regularly when I thought about my disease. It really helped me to calm down.” (Respondent 1)</p>
Meditation	When facing negative thoughts sitting down and meditate, helped to gain a clear mind	5	<p>“I sat down in my chair and just started to meditate. (...) I started to visualise myself in a different world, which helped me to forget my worries for a few minutes” (Respondent 5)</p> <p>“Meditation helped me to lose my worries. (...) During that time I just do not have these negative thoughts.” (Respondent 7)</p>

Internal Strengths			
Internal Strengths	Definition	Frequency N	Quotation
Being optimistic	Being optimistic and self-confident to get back into life	42	<p>“The more often I got positive news that it did not come back, the easier it was to go on” (Respondent 1)</p> <p>“I tried to keep positive thoughts, even if it was a bad day in order to go keep going normally” (Respondent 1)</p> <p>“My self-confidence helped me to clear my thoughts and get back into my job. (...)I knew that I was able to stand firm after I managed to beat cancer.” (Respondent 4)</p> <p>“Being optimistic helped me to keep positive thoughts, so I was not scared that it will come back” (Respondent 3)</p>
Being persistent	The drive not to give up and live with the physical and mental consequences resulting from the illness	35	<p>“I always have to be careful when I eat, I cannot eat food that is too dry, otherwise I cannot swallow it or it can stuck in my throat. (...) But still, even if this causes some problems, I am willing to live with it instead of being dead.” (Respondent 7)</p> <p>“I was determined to get healthy again, I wanted to show everyone that I am not that weak” (Respondent 1)</p> <p>“I had to stop working at home, which was very hard for me mentally because I felt useless. (...) But I learned living with it and I found other ways to be productive and support my family.” (Respondent 2)</p>
Experiencing positive emotions	After the time of treatment, the participants enjoyed the small things that were considered	34	<p>“Just realising that life, in general, is not self-evidential made me realise that enjoying the small things like spending time with the people you love, is the most important thing.” (Respondent 5)</p>

Internal Strengths	Definition	Frequency N	Quotation
	as standard before.		<p>“Shortly after treatment, I had no daily routine. When I was able to go back to work, it was one of the biggest resources for me. (...) I did not know how important that was for me.” (Respondent 9)</p> <p>“I just started enjoying things like food in a completely different way, which was not possible during the treatment and which I was not aware before. (...) I am starting to eat things what I feel like I Want to eat right now and this makes me happy and gives me a good feeling.” (Respondent 2)</p>
Being active	Start spending more time outside and doing things that helped them getting fit or clearing their mind.	28	<p>“Shortly after surgery I started walking the stairs up and down and went down the hallway in order to feel better.” (Respondent 6)</p> <p>“I often went out for a walk or by bike in order to get fit again and clear my mind.” (Respondent 3)</p>
Reconciling oneself with the situation	After the treatment was done, one needs to adapt towards certain limitations and accept the disease or consequences as part of their life	26	<p>“I know that I am prone to cancer due to my family history, therefore I go to check-ups every year. (...) If it is coming back, I cannot change it but I can try to give me the best chance possible.” (Respondent 3)</p> <p>“Since I was diagnosed with cancer, I was shocked and did not want to accept it. (...) After some time, I accepted the condition and learned from it. (...) I started listening to my body in a different way to avoid remission.” (Respondent 5)</p>

Internal strength	Definition	Frequency	Quotation
Having knowledge and insight	Having knowledge and insight about what happened during treatment and what type of consequences are resulting from it but also how to act towards these consequences	22	<p>“My treatment was a long time ago and they did several things different as they would do today. They removed several lymph nodes, which they would not do today. This still affects me. (...) I needed to inform myself to counteract towards this problem.” (Respondent 2)</p> <p>“Even if you know that this saved your life, you suffer mentally from it because you miss something. It is an important part of a woman. (...) I had to learn that this was an important trade for my life. This took time.” (Respondent 2)</p> <p>“Normally I have to adapt my nutrition because a piece of my intestine is missing. This affects my digestion. (...) I needed some information from my doctor in order to adapt.” (Respondent 6)</p>
Setting small goals	Setting small goals, especially after the treatment, in order to get back into daily life.	20	<p>“Direct after treatment, I started to set small goals that I wanted to reach. (...) When I looked at my calendar, I did the tasks that I thought I was able to do. (...) when I felt that I was not able to do it, I cancelled the appointment. (...) From week to week I felt improvement and accomplishments.” (Respondent 8)</p> <p>“I felt very weak after the surgery, so I started setting small goals like walking the stairs up and down to get fit again. Every day I tried to be better than the day before.” (Respondent 3)</p>
Taking care of oneself	When one did not feel well, they mainly cared for themselves and cancelled appointments when necessary	18	<p>“When I did not feel like I want to do it, I just did not go.” (Respondent 10)</p> <p>“During treatment, I realised that I have to take more care about myself. This is something I still do, even if the others cannot fully understand it.” (Respondent 10)</p>

External Strengths			
External Strengths	Definition	Frequency	Quotation
Supportive Relationships	One's relatives and friends that helped them through the situation and supported them as good as possible	52	<p>"I am very thankful that my family and friends are that supportive. (...) Especially after the treatment they really take care of me when I overdid myself again." (Respondent 2)</p> <p>"Due to the consequences through the treatment, I am not able to work at home as I did before. (...) I am very thankful that my husband and children took care of it." (Respondent 8)</p> <p>"During the treatment, I realised what real friends are. (...) These real friends also helped me after the treatment and took my anxiety that it can come back." (Respondent 4)</p> <p>"My family and friends always supported me. When I was scared or had to go to the doctor, they always took time for me if I needed that." (Respondent 10)</p>
Spending time in nature	Spending time in nature helped to clear their thoughts and gave them energy to go through rehabilitation	32	<p>"When I started getting negative thoughts and got scared about remission, I stopped everything and went through a forest. This helped to clear my mind and I was able to go on with my tasks." (Respondent 5)</p> <p>"One of my favourite tasks during rehabilitation was spending time in my garden. Even if it was for 15 minutes it just gave me power to go on." (Respondent 8)</p>
Support from workplace	After the treatment is done, the workplace supported one to go back to their job after they feel healthy enough	24	<p>"My boss was very supportive and gave me all the time to get back to work again. (...) Getting back to my job really helped me to go on mentally." (Respondent 10)</p> <p>"After I told my boss about my condition, she supported me totally. When I was done with my treatment, he trained me to go back to my job again." (Respondent 8)</p>

External Strengths	Definition	Frequency	Quotation
Support from health-care providers	Even after the treatment was done, did the doctor helped to take the anxiety of remission away and helped during the rehabilitation.	18	<p>“I was always scared to go to the doctor afterward, but after I changed my doctor, he told me something that took my anxiety fully away.” (Respondent 1)</p> <p>“Before, during and after the treatment I felt safe and well because I fully trust the doctor. This also helps to go on after the treatment.” (Respondent 3)</p>