Using Strengths to Self-manage a Life with Visual Impairment

A qualitative interview study

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Abstract

Background: Visual impairments are wide spread around the globe. It is estimated that around 2,2 billion people are visually impaired. Such impairments often negatively impact the well-being and quality of life of those affected. To better face the many challenges imposed upon them by their impairments, many individuals with visual impairments employ self-management. To support this self-management, individuals with visual impairments can make use of their strengths and more specifically the strength-based approach. Here, the focus is laid upon strengths instead of limitations, enabling individuals suffering from visual impairments to grow and realize their full potential. Given its importance there is not enough research available about the strengths that individuals with visual impairments use to self-manage their lives. Therefore, the current study aims to identify which strengths are used by individuals with visual impairments to self-manage their lives.

Methods: A convenience sample was used to recruit 10 visually impaired participants that were needed for the current study. Semi-structured interviews were conducted to investigate the experiences these individuals have made with regards to their visual impairments and which strengths they thought helped them to self-manage their lives, Interviews were executed and audio-recorded via Skype, transcribed by the researcher, and finally coded following an inductive approach.

Results: After conducting the interviews, a total of 10 codes were found which were integrated into the main themes 'internal strengths', 'external strengths', and 'self-management strategies'. The internal strengths of having self-confidence and humour were found to directly contribute to the self-management strategies 'seeking help' and 'acceptance of the visual impairment' respectively.

Conclusion: The current study investigated the role that strengths play in self-management and offered an in-depth insight into which strengths supported individuals with visual impairments in their self-management. While some strengths aided the participants in their self-management strategies, others were beneficial to the participants independent of these strategies they employed.

Contents

Introduction

Imagine your vision was permanently low. For many people around the globe, this is reality. In fact, it is estimated that worldwide at least 2.2 billion people are affected by some form of visual impairment (World Health Organization, 2019).

These individuals often report lower levels of psychosocial well-being than the sighted population on measures including mental health, social functioning, and quality of life (Nyman, Gosney, & Victor, 2009). Additionally, being affected by visual impairment has often been linked with higher levels of anxiety (Bolat, Doğangün, Yavuz, Demir, & Kayaalp, 2011), higher risks of experiencing loneliness (Brunes, Hansen, & Heir, 2019) and even higher risks to commit suicide (Lam, Christ, Lee, Zheng, & Arheart, 2008). People who suffer from visual impairments further frequently report not being able to do things like reading, cooking, or driving (Thetford, Robinson, Knox, Mehta, & Wong, 2009). As a result of this, people with visual impairments are often unable to live independently (Langelaan et al., 2007; Thetford et al., 2009). Given that these individuals at least to some degree experience unpleasant consequences as a result of their visual impairments, it is important to support them to better live with their impairments. Therefore, the target group of the current study are individuals with visual impairments.

To be able to encounter these unpleasant consequences, many individuals with visual impairments are urged to engage in what is called self-management. Self-management is "the ability of the individual, in conjunction with family, community, and healthcare professionals, to manage symptoms, treatments, lifestyle changes, and psychosocial, cultural, and spiritual consequences of health conditions" (Richard & Shea, 2011, p. 261). As such, effective self-management enables individuals with visual impairments to mitigate the extent to which their visual impairments affect both their daily lives and mental health (Gallant, 2003; Barlow, Wright, Sheasby, Turner & Hainsworth, 2002).

However, while the value of self-management for individuals with visual impairments is clear, the exact strategies such individuals use to self-manage require research. Although the forms that successful self-management can take for persons with chronic illnesses in general have been well-researched (Grady & Gough, 2014; Lorig & Holman, 2003), there is a significant gap in the literature when it comes to the self-management of individuals with visual impairments. Such research often largely focuses on the same chronic illnesses which typically include diabetes, arthritis, and asthma (Barlow et al., 2002; Gallant, 2003; Newman, Steed, & Mulligan, 2004; Kralik, Koch, & Price, 2004). This is problematic, shown by the

study of Lorig and Holman (2003) that points out that there are many differences between patient populations amongst other things including their self-management. Consequently, it cannot be assumed that individuals with visual impairments use the same self-management strategies as other populations with different chronic illnesses do.

The fact that research often focuses on largely the same chronic illnesses is further problematic as it results in an imbalance in the distribution of self-management programs. Again diabetes, arthritis, and asthma are often the focus of such programs and interventions (Barlow et al., 2002). These programs often successfully reach their goals of teaching populations with different chronic illnesses approaches as well as strategies for effective self-management (Grady & Gough, 2014). However, only a few of such programs are tailored to individuals with visual impairments (Rees, Keeffe, Hassell, Larizza, & Lamoureux, 2010). In addition to this, individuals with visual impairments are often unable to attend the latter due to practical barriers such as problems with transport or ill health (Rees, Saw, Lamourex, & Keeffe, 2007). This shows that there are several obstacles that individuals with visual impairment must overcome to learn how to self-manage their lives compared to other populations with different chronic illnesses (Barlow et al., 2002). As a result, individuals with visual impairments have fewer opportunities to better understand their conditions and will eventually miss out on at least some of the positive impacts on the quality of life and the benefits that self-management can bring about for well-being, mood, and self-efficacy (Grady & Gough, 2014; Barlow et al., 2002). Consequently, it is particularly important to find a better way of aiding individuals with visual impairments to self-manage their lives adequately.

One such way that can support individuals with visual impairments in self-managing their lives is posed by positive psychology where the focus is laid on strengths instead of deficits and shortcomings (Sheldon & King, 2001). Strengths can thereby be defined as "any internal or external element that may improve the person's quality of life or well-being" (Bellier-Teichmann & Pomini, 2015, p. 101). Following the strength-based approach, individuals with visual impairment could benefit from using strengths not only to change their perspective but also to overcome challenges (Rashid, 2015). The use of strengths has further shown to aid individuals to grow, realize their full potential (Staudt, Howardw, & Drake, 2001) and improve their well-being (Wood, Linley, Maltby, Kashdan, & Hurling, 2011). It thereby nurtures resilience and supports a successful adaptation to adversity (Lee et al., 2013;

Zautra, Hall, & Murray, 2010), to name a few ways in which the use of strengths could be beneficial for the self-management of individuals with visual impairments.

Given this importance, there are not enough studies that have researched strengths used by individuals with visual impairments. However, the one study that is available about the topic confirms a significant association between strengths use, subjective happiness, and positive emotions of individuals with visual impairments. Matsuguma et al. (2018) found that the use of personal strengths can act as a shield for protecting visually impaired people from emotional distress and unhappiness.

However, it is unknown which strengths are used by individuals with visual impairments. Such knowledge is important as it could support individuals with visual impairments to better self-manage their lives in light of their impairments. The current study, therefore, fills this gap by interviewing individuals who are visually impaired about their self-management strategies as well as which strengths they use for their self-management. The following research question emerges: *Which strengths do individuals suffering from visual impairment use to self-manage their lives?*

Methods

The current study was conducted in Germany in 2020. A qualitative research design was chosen to get insight into the experiences individuals with visual impairments have made as a result of their visual impairments as well as their thoughts and opinions about which strengths they used to self-manage their lives in the light of their impairments. To enable this, semi-structured interviews were used.

Participants

The current study included 10 participants with visual impairments whose ages ranged from 22 to 26 (M= 23.8, SD= 1.17). Moreover, out of these participants, 8 were male and 2 were female. All participants were German. The inclusion criteria for participation in the interviews were a minimum age of 18 years as well as the presence of visual impairment according to the WHO (2018). This means participants had to have a visual acuity of worse than 0,3 or a visual field fewer than 10 degrees. This was determined by self-reports of the participants.

Procedure

Before starting the interviews ethical approval was sought and granted by the ethical commission of the University of Twente (request number: 200323). Participants for the current study were recruited via a convenience sample. The researcher knew the participants who all went to the same school for the blind and visually impaired as he had worked with them before. The researcher created a group chat in which he invited the potential participants and informed them about the interview study with a short introductory message (See Appendix A). In this group, participants were also asked by the researcher to voluntary participate in the interview. After a few participants did not show interest in the study, new participants were added into the group chat until a total of ten participants who were willing to take place in the current study were found. Those participants were then asked to send the researcher their Skype names privately. From this moment on all communication happened privately between each participant and the researcher via Skype. The group chat was deleted at this point.

The participants were then supplied with an information sheet (See Appendix B) containing detailed information about the interview. Additionally, a list of possible strengths (See Appendix C) was sent to the participants to help them further understand what was meant with the term strengths in the context of the current study. Lastly, the participants were provided with an informed consent to teach them about their rights (See Appendix D). After this, they were given time to read through the documents and ask questions that were then answered by the researcher. In some cases, the researcher read the documents to the participants due to their visual impairments. Moreover, participants were asked to sign the informed consent and send it back to the researcher. While most participants signed the printed form of the informed consent, some signed it digitally and sent it back to the researcher. When the informed consents were obtained, the researcher introduced himself and explained the purpose of the interview. Afterwards, the participants were read the definitions for the terms 'self-management' and 'strengths', to make sure they understood what was meant with them. If there were no remaining questions the interviews were conducted.

The first interview that was conducted was intended to function as a pilot test. The procedure for this interview did not differ from the procedure used for the interviews of the other participants. The pilot test was conducted to see whether there was a need to adapt interview questions and whether the quality of the audio-recordings would be suitable. Also, it was assessed whether the exchange of documents would run smoothly via Skype. Given

that questions did not need further adaptation, the audio-recording was of sufficient quality, and exchanging and downloading of documents was possible, the data from the pilot test was eligible to be used as the first interview of the current study.

The remaining interviews were also executed and recorded via Skype. All interviews were conducted in German. The length of the interviews ranged between 14 and 51 minutes. At the end of each interview, the researcher thanked the participants for taking part in the interview and gave them the opportunity to add remarks and ask questions. After all remaining questions were answered, the researcher offered the participants to leave their email addresses and send them the results of the study once the study was completed, in case they showed interest in the outcomes of the study.

Interview

An extensive interview scheme containing 16 open-ended questions (See Appendix E) was used to gain insight into the experiences the participants have made as a result of their visual impairments and which strengths they used to self-manage their lives. Interviews were semi-structured, and several probes were used to allow for a more flexible interview where the researcher could pick up on the things participants mentioned during the interview. The questions of the interviews can be structured in three parts. The first questions were concerned with a short introduction of the participants where demographics such as age and employment status were acquired. The next set of questions addressed general information concerning the participants' visual impairments. To give a few examples, questions included 'What kind of visual impairment are you affected by?' and 'For how long have you been visually impairment?'. Furthermore, the interview contained questions regarding the experiences participants had made as a result of their visual impairments. Also, at this point, the ways participants cope with their impairments were addressed. Questions included 'What is it like for you to live with a visual impairment?', 'What is going well?', and 'What do you find difficult?'. The following questions were aiming to explore the strengths that participants used to manage their lives in the light of their visual impairments. To give a few examples, questions such as 'What helps you in coping with your visual impairment?', 'Are there certain things that you are good at / strengths that you use to cope with your visual impairment?' and 'How do these strengths help you?' were used.

Data analysis

After all interviews were conducted, they were transcribed verbatim by the researcher using Microsoft Word. Only relevant parts of the interviews were translated into English. While transcribing, the interviews were anonymized so that participants were not identifiable from this moment on. Also, at this point, the audio files were deleted. The anonymized transcripts were then imported into Atlas.TI (Version 8.4.4) where they were read multiple times by the researcher to get familiar with the content of the interviews. After this, the interviews were analysed undertaking iterative and systematic steps. This means that the researcher, utilising content analysis of the interviews, created codes and at a later point in time adjusted and supplemented them by further codes. The reason for this is that new codes emerged frequently in the process of working through the transcripts of the interviews. Further, coding was an inductive approach which means that codes were created not by using predefined themes but by looking at the data and analysing which themes had emerged.

To create the first version of the coding scheme, the first two interviews were coded and checked by two supervisors to verify its completeness. After some suggestions for improvement, codes were adapted and combined. Consensus between the researcher and supervisors was reached and the definite coding scheme (See Appendix F) consisted of a total of 10 codes. These were integrated into the main themes 'self-management strategies', 'internal strengths', and 'external 'strengths'.

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Results

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After analysing the interviews, a total of 10 codes were found in order to answer the research question, '*which strengths do individuals suffering from visual impairment use to self-manage their lives'*.

Internal strengths

The first main theme that reoccurred throughout the interviews was named 'internal strengths' (Table 1). It includes qualities of the participants that they held and made use of with regards to their visual impairments. These were (1) 'resilience', (2) 'independence', (3) 'humour', and (4) 'self-confidence'.

Having resilience in the domains that are concerned by their visual impairments was the most frequently reported internal strength, referred to by 8 participants. Amongst other

things, participants mentioned that they needed resilience in order to successfully tackle tasks and challenges. As an example, one participant talked about his ambition to integrate into his workplace and how he needed resilience to not quit and persist throughout the many burdens imposed on him by this novel chapter in his life. These included, for instance, having to use computer programs that were not suitable for the blind or visually impaired. Many participants also made references to when they went to school. They experienced this time as stressful and reported needing resilience in order to not give up. One participant reported how he frequently had to have talks with his teachers, explaining to them his necessities related to his visual impairment. Another participant reported how he was getting bullied at school and used resilience to bear through it and not get pulled down by it. Other participants described how resilience was useful in their university life. As an example, one participant explained that before lectures he regularly had to ask the lecturer to print out the slides for him as the participant otherwise would not be able to read them properly: *"if the lecturers do not put the slides online on time, I have to go and ask them to and they always discuss with me because they sometimes do not want me to have the slides beforehand but otherwise I cannot see them […] and it helps that I am so consistent and do not leave unless I have the slides."* (P8) When asked how the participants have obtained this resilience, one of them stated that he did so by chasing and finally reaching a goal that he had in mind, which was going to university. He further explained that through this he understood that he needed time and had to put in a lot of work to reach such goals. Other participants reasoned that they became resilient by learning from their mistakes and reflecting upon their developments. An example of this is provided by one participant who described how failures taught him to try again. He further stated that this process took very long and that he is happy to have put in the work for it.

With a total of 7 participants mentioning 'independence', it is the second most reported theme. This code involves the participants' ability to independently manage their lives. According to the participants, being independent was essential to them as they needed it to be able to do as much as possible by themselves. One participant said: *"I am quite independent, meaning that I try to take care of things on my own and I also try to wait with asking people for help […] because I think even blind people can do a lot on their own, it is just more work […]."* (P3) Participants explained how they had an urge to tackle things on their own even if they would be confronted with difficulties. These difficulties were often a direct consequence of the participants' visual impairments. One participant gave an example of this by stating how she wanted to file documents at work by herself even though she had a

hard time reading them. She further explained that she was very proud of herself after successfully finishing tasks like these on her own and as a result had a sense of accomplishment and independence. Similarly, other participants emphasized how, instead of just letting others do the work for them, they rather wanted to try it themselves. They wanted to take initiative and try out things even if these would possibly fail. Other examples that were mentioned included going to work or university by themselves or being able to find friends at an arranged venue.

The next code, 'self-confidence', which was mentioned by 7 participants, was amongst other things crucial for the participants' ability to seek help. Participants explained how self-confidence enabled them to approach strangers and ask for help as many of the participants indicated being afraid of that. According to the participants, self-confidence was needed to dare approaching strangers and asking them for help regardless of this fear: *"[…] a certain amount of self-confidence. I think to some extent you have to have that […] if you have to ask people on the streets, or if you really have to ask for help […]."* (P3) Self-confidence also proved to be useful as it enabled the participants to talk more openly about their visual impairments and reveal to others that they could not see certain things. Participants reported how this also supported them in seeking help. They explained that approaching strangers often required the participants to engage in such an exposition of their visual impairments. An example was provided by one participant who described how he feared the judgement of the bus driver when asking him which bus line the bus was. Some participants explained how they developed confidence from trying to approach strangers and seeing that it worked and that they were getting the help they asked for when dared to ask for it. Others referred to the courses of their lives and that they have gotten more confident simply from growing up. Besides supporting the participants when it comes to approaching strangers, some participants explained how they used self-confidence to dare doing other things ranging from assembling furniture to being able to graduate from school. These examples had in common that the participants at first glance thought them to be difficult, if not even impossible for them to accomplish. Participants explained how having the confidence to dare such, for them, difficult tasks, over time made them understand how capable they were and what they were able to accomplish. Participants thereby mentioned the important role of having a sense of achievement and the positive effects this had on their self-confidence and willingness to try other things as well.

Continuing, 6 participants reported using 'humour'. According to the participants, this helped them as it made situations they experienced appear more normal and less complicated: *"[...] humour helps a lot, because I deal with it [the visual impairment] with humour, like I said, to me, it is something completely normal and I do not have to make things more complicated than they are."* (P4) In this context participants also stressed the importance of being able to laugh at themselves and jokes that were made about them or their visual impairments. According to the participants, humour helped them to better accept their situations. They reasoned that through having a sense of humour, they overall were more easy-going which had as a consequence that they did not take themselves or their situations too seriously. Many participants also explained how being humorous and easy-going further helped them to be less stressed and to worry less. Additionally, a few participants also explained how humour enabled them to attract more friends which again, they stated, made them feel more normal and satisfied with their lives.

Table 1.

Internal strengths mentioned by the participants

Internal strength	Frequency	Code definition	Example quote
Resilience	8	Not quitting and being resilient in the various problematic situations that result from having a visual impairment.	"if the lecturers do not put the slides online on time, I have to go and ask them to and they always discuss with me because they sometimes do not want me to have the slides beforehand but otherwise I cannot see them […] and it helps that I am so consistent and do not leave unless I have the slides." (P8) "[…] even if it is bad but afterwards things get better quickly. Sometimes one just has to be resilient and sit through it, you know?" (P4)
Independence	7	Being able to manage one's life as independent as possible.	"Since I learned how to be independent, things are going quite well for me […]." (P10) "I am quite independent, meaning that I try to take care of things on my own and I also try to wait with asking people for help […] because I think even blind people can do a lot on their own, it is just more work […]." (P3)

Table 1. Continued

Internal strength	Frequency	Code definition	Example quote
Self-confidence	7	Daring things that at first glance seem difficult or even undoable due to the visual impairment.	"Self-confidence must be given in order to dare certain things that at first glance seem difficult. […] if I immediately say to myself that I cannot do it because I cannot see it …, after trying once one realizes that one is actually capable of doing it." (P6) "[…] a certain amount of self-confidence. I think to some extent you have to have that […] if you have to ask people on the streets, or if you really have to ask for help […]." (P3)
Humour	6	The ability to laugh about oneself and one's visual impairment. Also, overall being relaxed and easy-going.	"[…] humour helps a lot, because I deal with it [the visual impairment] with humour, like I said, to me, it is something completely normal and I do not have to make things more complicated than they are." (P4)

External strengths

Another main theme that was observed during the analysis of the interviews was the use of 'external strengths' (Table 2). It can be understood as an outside help for participants to cope with their visual impairments. External strengths included (1) 'social environment' and (2) 'tools/aids'.

When asked about external strengths, the importance of support systems for the participants became evident quickly. Having supportive friends was mentioned by all 10 of the participants. According to them, this support was expressed through conversations and encouraging words, or through rather practical actions, such as when friends offered to read out the menu at a restaurant. Similarly, families and partners have shown to be an essential support for the participants, as they helped them with many things, often when the participants struggled to see something: *"[...] I was always supported by my family when I needed help because I could not see things."* (P2) Examples for things that participants had a hard time seeing often revolved around going outside but also more specific actions such as playing board games with the family. Moreover, being surrounded by people who were in similar situations as the participants also had a positive influence on the participants as they reported. Such encounters mostly occurred at the participants' schools which was a school for the blind and visually impaired. Meeting other visually impaired or blind individuals created a feeling of community and solidarity for the participants and showed them that they were not

alone. According to the participants, contact with other visually impaired people taught the participants certain tricks for everyday life. An example was given by one participant who reported to often share experiences with fellow visually impaired individuals about useful smartphone apps or techniques to pick out clothes. Further, many participants appreciated being accepted by their peers and treated in a normal way in the sense that their visual impairments were not always central.

Moreover, using 'tools/aids' was reported by all 10 of the participants. They reported how assistants or technical devices are useful as a means of counteracting their lack of eyesight. An example for this was given by one participant: *"By me downloading certain apps or making adjustments in the settings of my smartphone […] and technical progress, I mean these days one does not even have to download any apps as the smartphones come with so many preinstalled settings [...]."* (P1) This helped the participants to work quicker and with fewer barriers. Examples for apps that were mentioned included screen-reading devices and magnifiers. Moreover, participants explained how they often used their smartphone camera to take pictures of certain objects or fonts that they came in contact with in their day-to-day life. This way, participants could zoom in on what they could not see and hence enabled themselves to see it.

Table 2.

External strengths mentioned by the participants

External strength	Frequency	Code definition	Example quote
Social environment	10	Having a support system of friends and family that accept and treat oneself just normal.	" […] I was always supported by my family when I needed help because I could not see things." (P2) "It might seem odd but the fact that my partner can see just normal helps me a whole lot. That is just a huge advantage because we do a lot together in our spare time and then she basically is my eyes […]" (P1)
Tools/aids	10	Using assistants or technical devices as a means of counteracting the lack of eyesight.	"By me downloading certain apps or making adjustments in the settings of my smartphone […] and technical progress, I mean these days one does not even have to download any apps as the smartphones come with so many preinstalled settings […]." (P1)

Table 2. Continued

External strength	Frequency	Code definition	Example quote
			"I had an assistant in school who supported me, also during conversations I had with my teachers […] and because of that I always had a feeling of not being alone and not having to stick through everything by myself […]." (P3)

Self-management strategies

The last main theme 'self-management strategies' includes four codes that were identified during the analysis of the interviews (Table 3). These were (1) 'seeking help', (2) 'acceptance of the visual impairment', (3) 'downward comparison', and (4) 'use of other senses'. All of these codes address the participants' ability to self-manage their visual impairments in their daily lives.

The first self-management strategy was called 'seeking help' and it was mentioned by 9 participants. According to the participants, it was helpful for them to be able to approach both strangers as well as familiar people as it most likely had as a consequence that the participants received help. One participant stated: *"Well, I am a pretty open guy which means that when I am somewhere I have no problem with telling people that I cannot see very well […] and I also have no fear when it comes to just asking people for help. This is extremely helpful […] because they do not ask you, you have to ask them."* (P1) Participants further reported to often require such help in their day-to-day lives. To give a few examples, support was necessary when the participants were not able to read the destination board at train stations or price-tags at the grocery store. In addition to this, participants also mentioned how they at times obtained help from themselves. They explained how it was helpful for them to do research about their visual impairments as this aided them in coming to terms with it. Also, through doing research, participants were enabled to learn about their possibilities of how to manage their lives with their visual impairments. One participant, for instance, explained how he researched the best possible way for him to organize his kitchen so that he would find everything even if he would not see it.

The next self-management strategy that participants used to deal with their visual impairment was labelled 'acceptance of the visual impairment'. It was mentioned by 8 participants. They stated that practising acceptance towards their visual impairments helped them to self-manage their lives as it enabled them to live in accordance with their

impairments. It further helped them to feel satisfied and lead a happy life. When explaining how the participants have gotten the level of acceptance they had towards their visual impairments, many of the participants stressed the importance of the fact that they were congenitally visually impaired which means that their visual impairments were present from birth onwards. They explained how they, as a result of that, were used to seeing the way they saw. According to the participants, this habituation towards their situations helped them in feeling normal about their lives and accepting their situations. One participant stated: *"[…] I can deal with it [the visual impairment] quite well because as I already said I have it since the day I was born, and I grew up like this […]."* (P2) Other participants described that knowing that they could not change their situations aided them in the process of accepting them as it took the decision for the participants. The participants reasoned that they were more or less forced to accept their visual impairments and had no other choice. Participants also explained how they did not waste their energy on such things that lay outside of their power to change and hence rather accepted their circumstances. Regardless of how acceptance of the visual impairment was reached, participants reported benefiting from it as it overall made their lives easier.

The self-management strategy 'downward comparison' was explicitly helpful for 7 of the participants. The participants reported that they compared themselves with others who were worse off and as a result, felt more grateful and satisfied with their situations. According to the participants, these others often were people who had less eyesight than themselves. Besides gratitude, such comparison also contributed to the participants' happiness and overall positivity. One participant stated: *"[…] because if one meets others who are in a similar situation or even worse off than oneself … and since then I am actually pretty happy, that I am able to see as much as I can see."* (P7)

The 'ability to use other senses' was mentioned by 6 participants as a make-up or support for their lack of eyesight. As an example, one participant reported that due to his visual impairment, he often relied on his sense of hearing: *"Due to my bad vision I have a really good sense of hearing and I […] try to rely on it a lot."* (P9) He further explained, that for him, this was especially helpful in situations happening in traffic such as crossing the street. The participant explained how he used his good sense of hearing to hear if cars approached so he could safely cross the street. Another participant explained how his good sense of hearing aided him in finding his friends in the hallway when they, for instance, had a lecture at university together. Other participants stated how good their sense of touch was and

how it was helpful for them to make up for their lack of eyesight. As an example, for this, one participant reported how she, when paying for something, was able to feel how much money in coins she held by using her fingers. This enabled her to pay without having to rely on others' indication about how much money she handed over to, for instance, a cashier.

Table 3.

Self-management strategies mentioned by the participants

Self-management strategy	Frequency	Code definition	Example quote
Seeking help	9	Being able to approach both strangers as well as people they know, asking for help, and being open-minded, also with regards to the visual impairment and the shortcomings associated with that.	"Well, I am a pretty open guy which means that when I am somewhere I have no problem with telling people that I cannot see very well […] and I also have no fear when it comes to just asking people. This is extremely helpful […] because they do not ask you, you have to ask them." (P1) "[…] you have to ask people on the streets, or you really have to ask for help […]" (P3)
Acceptance of the visual impairment	8	Accepting one's visual impairment and having learned to live with it. Identifying with one's visual impairment and not neglecting it.	"[…] it [the visual impairment] is part of my life and I do not know any different, I more or less forget about it in my day-to-day life actually […]" (P3) "[…] I can deal with it [the visual impairment] quite well because as I already said I have it since the day I was born, and I grew up like this […]." (P2)
Downward comparison	7	Comparison to others who are worse off than oneself in the sense that they had less eyesight and as a result feeling more grateful or positive about oneself and one's situation.	"[…] because if one meets others who are in a similar situation or even worse off than oneself … and since then I am actually pretty happy, that I am able to see as much as I can see." (P7) "[…] and then I think to myself, 'there are people who cannot do that [seeing] and have even more difficulties than I have' and then I feel this gratitude for what I have and that really helps me at times I am struggling with my visual impairment […]." (P2

Table 3. Continued

Self-management strategy	Frequency	Code definition	Example quote
Ability to use other senses	6	The ability to use other senses such as hearing and touching to make up or support for the lack of eyesight.	"Due to my bad vision I have a really good sense of hearing and I […] try to rely on it a lot." (P9) "[…] on the whole I am quite good with memorizing paths, even sometimes when I am going somewhere with people that can see, they do not have a clue where they are while I still keep track of everything […]." (P8)

As a concluding remark, participants of the current study reported various internal as well as external strengths that they thought helped them concerning their visual impairments. Additionally, the participants reported multiple self-management strategies that they used to self-manage their lives.

Discussion

This study aims to explore which strengths individuals suffering from visual impairment use to self-manage their lives. It was found that each of the participants used a number of internal as well as external strengths. These often seemed to support or even enable the use of certain self-management strategies, connecting strengths and self-management strategies at least to some degree. After discussing internal as well as external strengths, the self-management strategies that participants reported will be reviewed and put into relation to the strengths that were mentioned.

The internal strength of 'resilience' was frequently used among the participants of the current study. It enabled them to reach goals and endure challenges they faced, that were often a result of their visual impairments. The role of resilience in chronic illness has been well researched. Resilience has shown to support a successful adaptation to chronic illnesses as it supports the maintenance of emotional well-being despite difficult circumstances (Kralik, van Loon, & Visentin, 2006; Trivedi, Bosworth, & Jackson, 2011). Similarly, the study of Kristjansdottir et al. (2018) found that 'being persistent' as well as 'goal setting' were important components for their participants' self-management as it not only enabled their participants to keep going but also to set, adjust and fully dedicate to their goals. Because there is little research focusing on resilience among the population of individuals with visual

impairments, the current study validates the applicability of resilience among this population. This applicability might be a result of the fact that individuals with visual impairments similar to other chronic illnesses face many challenges as a result of their illnesses (Bolat et al., 2011; Brunes et al., 2019).

Another internal strength that the current study found was 'independence'. Quite a few of the participants of the current study mentioned the importance of being independent. This enabled the participants to be less reliant on help which was a wish all participants expressed. Likewise, the study of Delmar et al. (2006) that researched chronic illnesses based on chronic illnesses such as type I diabetes, colitis ulcerosa, and patients with coronary occlusions found that independence and self-determination had a significant value for the participants of their study as it enabled them to be respected and independent of the help of others. Given that many participants of the current study in the context of the code 'independence' reported to profit from being well-organized and having their structure, the study of Kristjansdottir et al. (2018) bears close resemblance. The researchers found 'planning and prioritizing' to be an important self-management strategy for the participants of their study as it enabled the latter to plan their days in a way aiming to avoid stress. The findings of the current study extend the pool of researched chronic illnesses and validate the results of the studies of Delmar et al. (2006) and Kristjansdottir et al. (2018) for people suffering from visual impairments.

Further, the current study's internal strength of 'self-confidence' is a factor that has not been researched previously within the population of the visually impaired, although its important role has been acknowledged in other chronic illnesses. For instance, the study of Kristjansdottir et al. (2018) found 'having courage' to be an important internal strength for their participants as it amongst other things enabled them to be willing to try out new things. Likewise, the participants of the current study mentioned a variety of situations in which they needed self-confidence to dare certain things. This illustrates the important role of self-confidence or courage not only for individuals with chronic illnesses such as those researched by Kristjansdottir et al. (2018) but also for people with visual impairments. Again, this need for self-confidence could be accounted for by the fact that individuals suffering from visual impairments face more challenges than the general population does (Bolat et al., 2011; Brunes et al., 2019; Lam et al., 2008; Thetford et al., 2009).

Another outcome of the current study was the internal strength of 'humour'. This strength was used by the participants to feel more 'normal', easy-going, and less serious about their situations. Such use of humour is in line with prior research. The study of Sullivan,

Weinert, and Cudney (2003), for instance, found humour to be used as an adaption strategy by many women with chronic illnesses. The use of humour and laughter helped in their daily lives as it lowered their stress level and tension. Likewise, Kristjansdottir et al. (2018) found that a sense of humour was beneficial for the participants of their study as it aided them in difficult situations, making the use of humour an important self-management strategy for these participants. These findings extend the population of illnesses that were researched by Kristjansdottir et al. (2018) and validate their applicability towards individuals with visual impairments.

Moving on to the external strengths that the current study found, having a 'social environment' was reported by the majority of participants to be important for them, for reasons related to acceptance and support. Especially friends, family, and fellow students or colleagues at work were highlighted by the participants. These often assisted the participants in their daily lives as well as offered emotional support when they needed it. These findings are in line with a lot of prior research. Amongst others, Kristjansdottir et al. (2018) state that relationships with family and friends are crucial for individuals with chronic illnesses as they offer practical and emotional support. Similarly, prior research stresses the importance of family members and social support of friends in successfully adapting towards visual impairment (Bambara et al., 2009; Hodge and Eccles, 2014). Furthermore, reports given by participants of the current study stress the importance of leisure activities and being active for self-management. Participants mentioned how they enjoyed meeting friends and going out in their spare time. Similar results were obtained by the study of Kristjansdottir et al. (2018) who also report 'being active' to be an important self-management strategy. Further, the study of Kef and Deković (2004) found that being active including social activities increased the well-being of individuals with visual impairments. Lastly, participants' reports summarized under the current code 'social environment' pointed out the positive effects of meeting people who were in similar situations in the sense that they also had visual impairments. Likewise, the participants in the study of Kristjansdottir et al. (2018) found it pleasing to talk to people who have had comparable experiences. As a result of this, their study found one self-management of chronically ill people to be about exchanging with and learning from people with similar experiences and concerns. Similar to the current code, the participants of the study of Kristjansdottir et al. (2018) stated that such fellowship with peers helped them feel less lonely. The current findings not only validate the important role of family and friends that Bambara et al. (2009) and Hodge and Eccles (2014) stress but also extend the findings of

Kristjansdottir et al. (2018) as exchanging with and learning from people with similar experiences and concerns also proved to be of importance for individuals with visual impairments.

Further, the next external strength, 'tools/aids', includes reports about participants using their smartphones or other assistive technologies as a support for their daily lives. This finding is in line with prior research that acknowledges the effectiveness of devices and other equipment for individuals with visual impairments as it assists them to live independently (Cook & Polgar, 2014). Moreover, Martz (2017) points out that mobile phones have profound advantages for people with visual impairments. The researcher states that mobile phones enable the use of certain applications which then support individuals with visual impairments in multiple ways, e.g. getting reminded of when to apply eye-drops. This is in line with the findings of the current study where participants reported to use their smartphones mostly because it allowed them to use several applications. These would then enable them context-specific things such as checking train departures in an app specifically made for the blind or playing games that were made accessible for the visually impaired. In the current code 'tools/aids' participants also reported using assistive devices in educational domains. This can be explained by the fact that such technologies have proven to, amongst other things, enhance reading as well as writing skills, thereby facilitating the learning process (Alves, Monteiro, Rabello, Gasparetto, & Carvalho, 2009).

While many of these strengths did not appear to explicitly be used by the participants for self-management, the current study found a link between the use of some strengths and certain self-management strategies. Thereby it is noteworthy that this link was only found for internal strengths. External strengths did not appear to explicitly be used by the participants for their self-management. The reason for this could be that the external strengths found by the current study, namely 'social environment' and 'tools/aids', are generally helpful for the participants and did not particularly support them in their self-management. Also, external strengths were often a given for the participants. Participants appeared to be used to having a family that supports them as well as tools and aids that would make their everyday lives easier. As a result of this these external strengths appear to be more of a general support for the participants and not necessarily linked to particular self-management strategies. Internal strengths, on the other side, were reported to be more helpful for specific self-management strategies of the participants. The reason for this could be that the participants had to develop

these strengths by themselves which could have as a consequence that such internal strengths had a higher value for the participants and were hence more prevalent for the participants.

The first of these internal strengths that was found to be linked to the participants' self-management was the internal strength of 'self-confidence'. It was found to be connected to the self-management strategy 'seeking help'. This strategy supported the participants by increasing their chances of getting help. Even though 'seeking help' has been deemed as important for the self-management of various chronic illnesses in prior research (Kristjansdottir et al., 2018), the exact processes behind this self-management strategy remain unclear. The current study suggests that self-confidence might be a strength that supports or even enables such help-seeking behaviours. The reason for this is that seeking help often required the participants of the current study to approach strangers and confide in them with their visual impairments which many of the participants were afraid of or at least felt uncomfortable with. Participants frequently reported being in need of self-confidence to dare approaching strangers and asking for their help. Also, many participants explained how they started off with little confidence and that they had come a long way to develop their confidence. The current study hence sheds light on the important role that the internal strength of self-confidence seems to have for the ability of visually impaired people to seek help.

Another link between strengths and self-management strategies was found connecting the internal strength of 'using humour' and the self-management strategy 'acceptance of the visual impairment'. While participants stated different ways in which they came to accept their visual impairments, the use of humour was frequently deemed important in this process. It seemed to encourage acceptance as it helped the participants to be less serious about their visual impairments. The positive effects of acceptance of chronic conditions have been described by prior research, for instance, in the study of Bergeron (2013). The researchers confirm the positive effects of acceptance among the visually impaired as they found acceptance to be positively correlated with well-being. Likewise, the study of Kristjansdottir et al. (2018) found that the internal strength 'reconciling oneself with the situation' which closely resembles the current study's finding 'acceptance of the visual impairment' to be helpful for their participants. Specifically, it enabled them to reconcile themselves with their situations and accept the symptoms as well as limitations of their illnesses. The current study not only validates that acceptance is an important self-management strategy as it seems to enable individuals with visual impairments to lead a happier life, but it also points out a novel connection between being acceptant of one's condition and the use of humour. While prior

research describes the important role that both humour (Sullivan et al., 2003), as well as acceptance (Bergeron, 2013; Kristjansdottir et al., 2018) can have in adapting to chronic illnesses, a possible connection between these two has not been investigated yet.

Other self-management strategies the current study found did not seem to be linked with any particular strengths. The first one of these is the self-management strategy 'downward comparison'. This self-management strategy was frequently used among the participants of the current study as comparing themselves with others who were worse off enabled them to feel positive emotions such as gratitude. Participants explained how they as a result of this were happier and more satisfied concerning their situations. Similarly, Rogers, Gately, Kennedy, and Sanders (2009) describe downward comparison as a regulator for emotions and help for people in feeling better about their situations. The researchers also mention the positive influence on coping such comparisons yield. Research done by Affleck, Tennen, Pfeiffer, Fifield, and Rowe (as cited in Rogers et al., 2009) further points out the important role of social comparison for chronically ill individuals as it enables them to retain a positive sense of self. The current study validates these findings towards the population of individuals with visual impairments.

The least used self-management strategy that the current study found, which was 'use of other senses', has not been described by prior research. Further research on this topic is required as the use of other senses might pose a novel self-management strategy that could ultimately help individuals with visual impairment to better self-manage their lives and increase their well-being.

The current study found that multiple of its self-management strategies as well as strengths have previously been deemed important by other research. Especially, the study conducted by Kristjansdottir et al. (2018) bears close resemblance. However, since their study focused on chronic illnesses such as chronic respiratory disease, chronic pain, and morbid obesity, many of the self-management strategies as well as strengths that were introduced by the study of Kristjansdottir et al. (2018) had not been linked to individuals with visual impairments. The current study validates the majority of results reported by Kristjansdottir et al. (2018) to the population of the visually impaired, hence broadening the pool of researched populations concerning self-management and strengths. Moreover, the current study further investigated the role that strengths play in self-management and offered an in-depth insight into which strengths aided individuals with visual impairments in their self-management. Most beneficial were the strengths self-confidence and humour as they contributed the

participants in their self-management strategies 'seeking help' and 'acceptance of the visual impairment'.

Strengths and limitations

The current study has a variety of strengths, one of which is its relevance for current and future population of the visually impaired. Studies have shown that the risk of becoming visually impaired increases with age (Congdon et al., 2004; World Health Organization, 2019). This means that sooner or later many people will have to deal with the topic of visual impairment as they will be affected by it. Knowing which strengths help in self-managing one's life when confronted with such an impairment becomes even more important and the current study makes an important first step in identifying such strengths.

Similarly, by reading this study, individuals that already suffer from visual impairments can be supported to learn about strengths that can help them in self-managing their lives. Due to the fact that such individuals are often unable to attend self-management programs or interventions (Rees et al., 2007), the current study is important for this population as they otherwise may not be able to access information about self-management. Next to the fact that the current study supports individuals with visual impairments as the latter can read and benefit from the current findings, there is another major advantage that the current study has for individuals with visual impairments. It serves as a basis for further studies to develop a more suitable way for these individuals to learn about their self-management and how they can use their strengths for this.

Another strength of the current study is concerned with the fact that the participants knew the researcher on a personal level. Therefore, the participants spoke openly to the researcher and were willing to answer all of the researcher's questions which, given that illnesses such as visual impairment can be a sensitive topic for participants to talk about, is another major advantage of the current study.

Besides these strengths, the current study, however, has some limitations. The first limitation is concerned with the sample of the current study as it is based on a rather small sample size. Further, there were more men than women in the current study and all participants were young adults. As a result of this, the findings of the current study may not be generalizable towards the general population of visually impaired individuals. A larger and more diverse sample is needed for further studies to ensure better generalizability and consequently better applicability of the current findings towards the population of the visually

impaired. Also, the fact that visual impairments are most prevalent among people over the age of 50 (World Health Organization, 2019) requires studies similar to the current one but with a focus on older adults. This way the results of the current study can be validated among the group of individuals that are most often affected by visual impairments and finally also support those individuals in their self-management. In this context, it is also worth noting that in the recruiting process, potential participants were added in a group chat. This most likely had negative effects on their anonymity as they could determine the other participants that took part in the current study. However, this group chat functioned solely as a means of recruitment and participants were interviewed individually. To provide better anonymity, group chats for the recruitment of the participants should be avoided.

Another limitation is concerned with the fact that because the researcher knew the participants on a personal level, they might have tried to answer questions in a socially desirable way or in a way that was influenced by the presence of the researcher. However, given the fact that the population of visually impaired individuals is often hard to reach (Kauffman et al., 2013), valuable information could be obtained. Again, for future studies the sample should be more diverse and include participants that the researcher does not know on a personal level.

Lastly, while analysing the interviews, the researcher realized that he often failed to ask for the reasoning behind the participants' statements, resulting in a lack of data on the latter. This would have especially contributed to a more complete picture in the results section of the current study. To prevent this, future studies should not only use more probes to get to the bottom of the answers given by the participants but also ask participants to elaborate more on the reasons behind their answers.

Implications for further research

As stated previously, several studies report self-management strategies and strengths often based upon the same few chronic conditions diabetes, arthritis, and asthma (Barlow et al., 2002; Gallant, 2003; Newman et al., 2004; Kralik et al., 2004). As a result, there is a lack of research concerning other chronic illnesses and their self-management strategies and strengths. Similar to the current study, future studies should try to explore self-management strategies and strengths of other chronic illnesses that are not researched quite as often and hence shift the focus from diabetes, arthritis, and asthma (Barlow et al., 2002; Gallant, 2003; Newman et al., 2004; Kralik et al., 2004). It would be interesting to see whether similar self-

management strategies can be used across different chronic illnesses like it was at least to some degree the case in the current study. This would not only validate the important role of strengths as an underlying factor in self-management but also help building knowledge about which strengths in particular can be helpful for self-management. In fact, such research is important as there is a general lack of studies that explore the relationship between strengths and self-management. This lack can also be found across the populations of the visually impaired and future research should specifically target the population of the visually impaired more often. While this study showed that strengths such as self-confidence and humour are connected to certain self-management strategies of visually impaired individuals, further research is needed to validate these results and deepen the knowledge about which strengths in particular are helpful for individuals with visual impairments. In this context , the self-management strategy 'use of other senses' is to be explored as it has not been described as such in prior research. Hence it may embody a novel self-management strategy for individuals with visual impairments, possibly aiding them to better self-manage their lives.

Conclusion

The current study extends the findings of previous research about personal strengths reported by individuals with visual impairments by showing which strengths are used by the latter. Moreover, it adds to the existing body of self-management strategies of chronically ill individuals as only little is known about self-management of individuals with visual impairments. Additionally, the current study introduced a possible link between the use of strengths and self-management as it was shown that some of the strengths that were found seem to be helpful or even necessary to engage in certain self-management strategies, suggesting a complementary relationship between the two. At times these strengths were, however, also used independently of the self-management strategies. The current study further draws attention to the need for finding alternative ways for visually impaired individuals to learn about ways of self-managing and how they can use their strengths for this.

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Appendices

Appendix A

Introductory message

Hi Guys! Now the moment has arrived for me as well, I started my bachelor's thesis! In a nutshell, I am researching the topic "visual impairment and how to cope with it and what is helpful in coping with it" (There is no clear-cut title so far).

For my work, I need 10 or more interview partners who are not afraid of my very tricky and unpleasant questions! Okay, I am joking! I do need interview partners, but I will of course not be asking you any difficult or unpleasant questions. Questions such as "Which character traits help you in dealing with your visual impairment?" or "How do you deal with your visual impairment?"

I would be happy if some of you get in touch with me! I don't have an exact date for the interviews yet, but it will most likely start somewhere from mid-March and would have to be done until early April! For the interviews, I can come to you if you like me to. But maybe we can arrange small meetings because traveling to each of you individually means a lot of time and work for me! So enough of the talking, feel free to contact me, then I can plan something!
Greetings Kay

Appendix B

Information sheet

Thank you for participating in my study which is part of my bachelor's thesis as a third-year psychology student at the University of Twente! Your participation in my study is voluntary and there are no associated risks. My aim is to explore the strengths that you use to cope with your visual impairment. More specifically, I attempt to investigate how these strengths of yours contribute to your self-management and your ability to cope with the consequences of your visual impairment in everyday life. What I mean with 'strengths' are "any internal or external element that may improve [your] quality of life or well-being" (Bellier-Teichmann & Pomini, 2015, p. 101). As a support, I brought you a list with possible strengths, but you are invited to think about other strengths as well!

In my study you will be interviewed which means that I will ask you questions related to the above-mentioned topics. The interview will take approximately 30 – 60 minutes. This study has been reviewed and approved by the Behavioural, Management and Social Sciences Ethics Committee of the University of Twente. You have the right to take breaks or stop the interview at any given time without giving a reason for it.

Our interview will be audio-recorded and transcribed at a later point. In the transcript of our interview, your personal information will be anonymized. You have the right to request access to and rectification or erasure of your personal data. Please be aware of the fact that I will use anonymized quotes of our interview in my thesis.

If you have questions about your rights as a research participant or wish to obtain information, ask questions, or discuss any concerns about this study with someone other than the researcher, please contact the Secretary of the Ethics Committee of the Faculty of Behavioural, Management and Social Sciences at the University of Twente by ethicscommittee-bms@utwente.nl If you are interested in the results of this study, you can provide the researcher with your email address and the results will be sent to you after the study is finished.

Appendix C

List of strengths

To give you an idea of what is meant with 'strengths', please take a look at the following examples:

External factors such as (McQualdte & Ehrenreich, 1997):
- Existence of supportive social institutions (e.g., unions, church) and ability to find and use them

- Physical health

- Adequate income

- Rituals

- Supportive family and friends who provide concrete aid, emotional support, and feedback

Virtue Peterson und Seligman (2004):
- Wisdom and Knowledge

- Courage

- Humanity

- Justice

- Temperance

- Transcendence

Character strengths such as Peterson und Seligman (2004):
- Creativity (originality, ingenuity)

- Curiosity (interest, novelty-seeking, openness to experience)

- Judgment and Open-Mindedness (critical thinking)

- Love of Learning

- Perspective (wisdom)

- Bravery (valor)

- Perseverance (persistence, industriousness)

- Honesty (authenticity, integrity)

- Zest (vitality, enthusiasm, vigor, energy)

- Capacity to Love and Be Loved

- Kindness (generosity, nurturance, care, compassion, altruistic love, "niceness")

- Social Intelligence (emotional intelligence, personal intelligence)

- Teamwork (citizenship, social responsibility, loyalty)

- Fairness
- Leadership
- Forgiveness and Mercy
- Modesty and Humility
- Prudence
- Self-Regulation (self-control)
- Appreciation of Beauty and Excellence (awe, wonder, elevation)
- Gratitude
- Hope (optimism, future-mindedness, future orientation)
- Humour (playfulness)
- Religiousness and Spirituality (faith, purpose)

These strengths are just examples, be creative!

Appendix D

Informed consent

Consent Form for Interview Study – Strengths Used by Individuals with Visual Impairments to Self-Manage Their Daily Lives

YOU WILL BE GIVEN A COPY OF THIS INFORMED CONSENT FORM

Taking part in the study

	Yes
I have read and understood the study information dated … , or it has been read to me. I have been able to ask questions about the study and my questions have been answered to my satisfaction.	□
I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and I can withdraw from the study at any time, without having to give a reason.	□
I understand that taking part in the study involves being interviewed about strengths I use to self-manage my daily life in the face of my visual impairment.	□
I understand that the interview will be audio-recorded and then transcribed as text in an anonymized manner.	□
I understand that the audio-recording will be deleted after transcribing.	□

Use of the information in the study

I understand that information I provide will be used for this study only.	□
I understand that personal information collected about me that can identify me, such as [e.g. my name or where I live], will not be shared.	□
I agree that my information can be quoted anonymously in this study's research output.	□

Signatures

_____   _____   _____

Name of participant [printed]   Signature   Date

I have accurately read out the information sheet to the potential participant and, to the best of my ability, ensured that the participant understands to what they are freely consenting.

_____   _____   _____

Researcher name [printed]   Signature   Date

Study contact details for further information:

Kay Bringmann (k.p.bringmann@student.utwente.nl),

Ethics Committee of the Faculty of Behavioural, Management and Social Sciences at the University of Twente (ethicscommittee-bms@utwente.nl).

Appendix E

Interview scheme

Hi, my name is Kay and I today will be asking you questions with regards to the strengths that you use to self-manage your life in connection with your visual impairment. More specifically, I will be investigating which strengths you use and how they contribute to your self-management. As you probably already read in the information sheet self-management refers to "the ability of the individual, in conjunction with family, community, and healthcare professionals, to manage symptoms, treatments, lifestyle changes, and psychosocial, cultural, and spiritual consequences of health conditions" (Richard & Shea, 2011, p. 261). Additionally, with 'strengths' I mean "any internal or external element that may improve [your] quality of life or well-being" (Bellier-Teichmann & Pomini, 2015, p. 101). For inspiration please also consider the list of strengths that I handed to you with the information sheet!

Before starting the interview, I would like to tell you that you can withdraw from the interview without giving any reason at all times. We can take breaks whenever you like, and you do not have to give an answer to questions that make you feel uncomfortable in any way.

You already took a look at the information letter. Let us now also take a look at the informed consent I handed to you. If you want me to I can read it out loud for you.

If it is okay for you we would start the interview now. I would also like to start the audio-recording now if you agree.

Can you also tell me something about your visual impairment?

- Maybe to start off if you allow me I would like to ask you what kind of visual impairment you are affected by?
- For how long have you been visually impairment?
- Do you know your visual acuity and visual field?

Now I would like to ask you to talk about your experiences with regards to your visual impairment.

- I would be interested in how you are coping with your visual impairment in general.
  - What is it like for you to live with a visual impairment?
  - What is going well?
  - What do you find difficult?
  - Could you tell me more about that?

Now I would like to lay the focus of our interview on the way you cope with your visual impairment and the strengths you use for that.

- What helps you in coping with you visual impairment?

- Are there certain things that you are good at / strengths that you use to cope with your visual impairment?
  - Which strengths help you in particular?
  - How do these strengths help you?
- What else / who else is helpful for you in managing your visual impairment?
  - Can you give a few examples?
  - How do you use these things / strengths to manage your visual impairment?
- Are there other things / strengths that you use to manage your visual impairment?
  - How do these strengths help you?
- What strengths would be helpful for you to manage your visual impairment?
  - How do you think these strengths would help you?
  - What would you need to be able to obtain these strengths?
- Are there things / strengths that you possess / have access to but not use?
  - What keeps you away from using these strengths?
  - What would you need in order to use them / benefit from them?
  - How could these strengths help you?
- Describe a time where you had most difficulties as a result of your visual impairment.
  - How did you handle the situation?
  - Which things / strengths helped?
- Describe a time where you had least difficulties as a result of your visual impairment.
  - Which things / strengths helped / made this possible?

Thank you for participating in my interview. If you have any questions please do not hesitate to ask. Also, if you are interested in the results of my study you can give me your email address and once I am finished with my report I am happy to forward it to you! I will stop the audio-recording now.

Appendix F

Coding scheme

Main Theme	Codes	Frequency	Code definition	Example quote
Internal strengths	Resilience	8	Not quitting and being resilient in the various problematic situations that result from having a visual impairment.	"if the lecturers do not put the slides online on time, I have to go and ask them to and they always discuss with me because they sometimes do not want me to have the slides beforehand but otherwise I cannot see them […] and it helps that I am so consistent and do not leave unless I have the slides." (P8) "[…] even if it is bad but afterwards things get better quickly. Sometimes one just has to be resilient and sit through it, you know?" (P4)
	Independence	7	Being able to manage one's life as independent as possible.	"Since I learned how to be independent, things are going quite well for me […]." (P10) "I am quite independent, meaning that I try to take care of things on my own and I also try to wait with asking people for help […] because I think even blind people can do a lot on their own, it is just more work […]." (P3)
	Self-confidence	7	Daring things that at first glance seem difficult or even undoable due to the visual impairment.	"Self-confidence must be given in order to dare certain things that at first glance seem difficult. […] if I immediately say to myself that I cannot do it because I cannot see it …, after trying once one realizes that one is actually capable of doing it." (P6) "[…] a certain amount of self-confidence. I think to some extent you have to have that […] if you have to ask people on the streets, or if you really have to ask for help […]." (P3)
	Humour	6	The ability to laugh about oneself and one's visual impairment. Also, overall being relaxed and easy-going.	"[…] humour helps a lot, because I deal with it [the visual impairment] with humour, like I said, to me, it is something completely normal and I do not have to make things more complicated than they are." (P4)

Coding scheme Continued

Main Theme	Codes	Frequency	Code definition	Example quote
External strengths	Social environment	10	Having a support system of friends and family that accept and treat oneself just normal.	" […] I was always supported by my family when I needed help because I could not see things." (P2) "It might seem odd but the fact that my partner can see just normal helps me a whole lot. That is just a huge advantage because we do a lot together in our spare time and then she basically is my eyes […]" (P1)
	Tools/aids	10	Using assistants or technical devices as a means of counteracting the lack of eyesight.	"By me downloading certain apps or making adjustments in the settings of my smartphone […] and technical progress, I mean these days one does not even have to download any apps as the smartphone come with so many preinstalled settings […]." (P1) "I had an assistant in school who supported me, also during conversations I had with my teachers […] and because of that I always had a feeling of not being alone and not having to stick through everything by myself […]." (P3)
Self-management strategies	Seeking help	9	Being able to approach both strangers as well as people they know, asking for help, and being open-minded, also with regards to the visual impairment and the shortcoming associated with that.	"Well, I am a pretty open guy which means that when I am somewhere I have no problem with telling people that I cannot see very well […] and I also have no fear when it comes to just asking people. This is extremely helpful […] because they do not ask you, you have to ask them." (P1) "[…] you have to ask people on the streets, or you really have to ask for help […]" (P3)

Coding scheme Continued

Main Theme	Codes	Frequency	Code definition	Example quote
	Acceptance of the visual impairment	8	Accepting one's visual impairment and having learned to live with it. Identifying with one's visual impairment and not neglecting it.	"[…] it [the visual impairment] is part of my life and I do not know any different, I more or less forget about it in my day-to-day life actually […]" (P3) "[…] I can deal with it [the visual impairment] quite well because as I already said I have it since the day I was born, and I grew up like this […]." (P2)
	Downward comparison	7	Comparison to others who are worse off than oneself in the sense that they had less eyesight and as a results feeling more grateful or positive about oneself and one's situation.	"[…] because if one meets others who are in a similar situation or even worse off than oneself … and since then I am actually pretty happy, that I am able to see as much as I can see." (P7) "[…] and then I think to myself, 'there are people who cannot do that [seeing] and have even more difficulties than I have' and then I feel this gratitude for what I have and that really helps me at times I am struggling with my visual impairment […]." (P2)
	Use of other senses	6	The ability to use other senses such as hearing, feeling or orientation to make up or support for the lack of eyesight.	"Due to my bad vision I have a really good sense of hearing and I […] try to rely on it a lot." (P9) "[…] on the whole I am quite good with memorizing paths, even sometimes when I am going somewhere with people that can see, they do not have a clue where they are while I still keep track of everything […]." (P8)