CHAPTER 8

General Discussion and Summary
The main aim of the studies presented in this dissertation was to provide more insight into avenues for enhancing the social participation and psychosocial functioning of adolescents with a visual impairment. To achieve this, four studies were conducted with four different samples. The results of these studies show that social support is an important predictor of the psychosocial functioning of young people with a visual impairment, especially support provided by peers (Chapter 2). In addition, we found that the social support levels of primary support figures of young people with a visual impairment decrease over time. These results and the findings of previous studies on developmental challenges and delays in young people with a visual impairment (Huure & Aro, 1998; Kef & Bos, 2006) indicate that gaps in social support could be experienced when transitioning into adulthood. Therefore, a community-based mentoring program was designed (Chapter 3) and tested, by means of a randomized controlled trial (RCT), to evaluate the effect of providing additional support on social participation and psychosocial functioning.

The results of this RCT showed only small benefits for adolescents with a visual impairment in the mentoring program compared to care-as-usual (Chapters 5 and 6). Next, we examined whether matching mentors to mentees based on sharing the same disability would enhance the effect of the mentoring program. Comparisons on youth outcomes showed that mentors with a visual impairment might be somewhat more effective as mentors than those without impairments. However, matching on disability was found to have a negative effect on longevity of the mentoring match relationship (Chapter 4). In Chapter 7, additional research that further explored potential intra- and interpersonal factors related to the social development of participants with a visual impairment from adolescence to young adulthood, showed the importance of social competence as a predictor of psychosocial functioning (Chapter 7). The studies presented in the chapters in this dissertation provide knowledge about important developmental processes in adolescents with a visual impairment and insight into mechanisms that may improve social participating and psychosocial functioning.

In the final chapter of this dissertation, the main findings of the four studies are summarized and discussed. Subsequently, the main results are considered in the context of strengths and limitations and scientific, theoretical, and practical implications are provided. The chapter ends with a general discussion.
Summary of Main Findings

Levels of Social Support and Psychosocial Functioning: Is Additional Support Needed?

On average, young persons with a visual impairment have smaller social networks, fewer friends, and spend more time home alone (Gold, Shaw, & Wolffe, 2010; Kef, 1997; Kef, Hox, & Habekothé, 2000). As a result, they might be at a heightened risk for experiencing a lack of social support and loneliness. Perceived social support, inextricably linked to relationships with parents and peers, has been associated with psychosocial functioning (Cutrona, Cole, Calangelo, Assouline, & Russel, 1994; Friedlander, Davis, & Yong, 2007; Meadows, Brown, & Elder, 2006; Rueger, Malecki, Pyun, Aycock, & Coyle, 2016). The experience of loneliness and social isolation not only causes distress, but it can also have a detrimental effect on health outcomes and social participation (Caspi, Harrington, Moffit, Milne, & Poulton, 2006; Phillips, 1967; Viemerö & Krause, 1998), especially when loneliness is experienced during multiple life periods. It is therefore important to study predictors of loneliness to prevent early onset. By studying the levels of social support over time, possible gaps in support could come to light. Based on previous studies among typically developing adolescents, it was hypothesized that perceived support from peers in young people with a visual impairment would run a curvilinear course, with first an increase and later a decrease in peer support. For perceived parent support, a linear decrease over time was hypothesized. The second hypothesis was that both the starting point and the rate of change of perceived parent and peer support would predict loneliness in later life.

To study the trajectories of social support and its association with loneliness, latent growth curve modeling was used (Chapter 2). A total of 316 adolescents (mean age = 18 years, SD = 2.83), participated in the study in 1996, and three more measurement waves took place in 2005 (N = 205), 2010 (N = 178), and 2016 (N = 161). In 1996, participants were recruited within regular and special education and rehabilitation centers for people with a visual impairment. Equal gender distribution remained throughout the study, and participant drop-out rates were not associated with social support levels.

The results showed that perceived parent support linearly decreased over time. For perceived peer support, the hypothesized quadratic growth pattern was found. However, the peak in support found for perceived peer support was later than expected. No association was found between perceived parent support and loneliness in later life. Moreover, the initial level and the rate of change in perceived peer support both predicted loneliness in adulthood. This shows that adolescents who started with relatively little peer support as well as those who experienced the most rapid decline in peer support encountered most loneliness in later life. In conclusion, Chapter 2 provides evidence that a gap in support could be experienced in adulthood by young people with a visual impairment, because decreasing support levels from both parent and peers are perceived from adolescence to adulthood. Furthermore, support from peers during adolescence and young adulthood may be preventative for better psychosocial functioning later in life.
Evaluation of a Community-based Mentoring Program: Does It Work?

The results of the longitudinal study for social support and loneliness as well as results from research on social participation more broadly (Elsman, Van Rens, & Van Nispen, 2016; Gold, Shaw, & Wolfe, 2010; Greguol, Gobbi, & Carraro, 2015; Kef, 1997; Kef & Bos, 2006; Kef, Hox, & Habekothé, 2000; McDonnall, 2010b; Salminen & Karhula, 2014) indicate the existence of support needs in young people with a visual impairment. Social participation is vital to successfully completing social developmental tasks on time and contributes to health, psychological wellbeing, and quality of life (Larson & Verna, 1999; Law, 2002). It is therefore not surprising that lower psychosocial functioning has been reported in young people with a visual impairment (Huure & Aro, 1998; Pinquart & Pfeiffer, 2011a, 2014; Kef & Bos, 2006).

Mentoring programs have showed to be effective in enhancing youth outcomes (DuBois, Portillo, Rhodes, Silverthorn, & Valentine, 2011). Studies examining the effect of mentoring for young people with disabilities or chronic illnesses are rare. The positive effects of mentoring for young people with a disability in general has been shown on a variety of youth outcomes, such as self-efficacy, academic success, and communication skills (Britner, Balcazar, Blechman, Blinn-Pike, & Larose, 2006; Lipman, DeWit, DuBois, Larose, & Erdem, 2018; Maslow & Chung, 2013; McDonald, Balcazar, & Keys, 2005; Shpigelman, Weiss, & Reiter, 2009). Mentoring for young people with legal blindness mainly focused on outcomes in the domain of education and employment (Bell, 2012; O’Mally & Antonelli, 2016). Less is known about the impact of mentoring on other domains of social participation (leisure activities and social relations) and psychosocial functioning. Therefore, in this current dissertation, a community-based mentoring program aiming to improve the social participation and psychosocial functioning of adolescents with a visual impairment was evaluated on its effects.

To study the effectiveness of this mentoring program, a research protocol was developed (Chapter 3). A total of 76 adolescents (aged between 15 and 22 years, 46% boys) were recruited for participation in an RCT that compared the mentoring program to a care-as-usual control group. The mentoring program, called Mentor Support, was either provided by mentors with or without a visual impairment. Mentor Support consisted of 12 meetings occurring over a period of 12 months. Activities performed during the meetings were based on the mentees’ goals and interests. Primary outcomes, assessing social participation, were the level of participation, a composite score of social participation, the amount of peer activities, the size of social networks, social support, and satisfaction with social support. Secondary outcomes, assessing psychosocial functioning, were self-esteem, loneliness, the acceptance of impairment, perceived self-competence, wellbeing, and the satisfaction of the three basic psychological needs of the self-determination theory (autonomy, competence, and relatedness). Questionnaires were assessed through computer-assisted telephone interviews at baseline, at 12 months, and at 19 months. Multilevel growth models were used to study the effect of the mentoring program.

The results showed that the mentoring conditions had no effect on changes on any of the social participation outcomes compared to the care-as-usual control group (Chapter 5). Adolescents in both conditions increased over time in their degree of peer activity and satisfaction with social support. For psychosocial functioning, two of the eight outcome variables were enhanced by the mentoring
program: two of the three basic psychological needs according to the self-determination theory (autonomy satisfaction and competence satisfaction) (Chapter 6). Regardless of the study condition, participants’ wellbeing, self-esteem, and acceptance of their impairment increased, and their feelings of loneliness decreased. Age, characteristics of the visual impairment, comorbidity, and number of match meetings were not associated with change in social participation during the mentoring program. In addition, no indirect effects were found for the relation between the mentoring program and change in social participation by psychosocial functioning. These RCT results show that the mentoring program was only of small benefit for adolescents with a visual impairment compared to care-as-usual.

Due to the smaller-than-planned sample size, the main findings for the effectiveness of the mentoring program must be interpreted with caution. The complexity of the multidimensional construct of social participation and reactivity among adolescents in the care-as-usual control group could be an explanation for the lack of superiority of the mentoring program for most of the outcome variables. However, the positive intervention findings for autonomy satisfaction and competence satisfaction are in line with earlier studies showing the effectiveness of mentoring for psychological/ emotional outcomes (Dubois et al., 2011). Furthermore, it remains possible that the effects of mentoring are enhanced when mentors and mentees have the same disability.

**Support Provided by Mentors with a Similar Disability: Does It Enhance the Effect of the Mentoring Program?**

The positive effects of mentoring have been demonstrated in previous research (Dubois et al., 2011). However, these effects seem to be relatively small. Program practices can enhance the positive effect of mentoring programs. When mentoring programs match mentors and mentees on interest similarity, the effect size doubled from small (.20) to medium (.41) on youth outcomes compared to mentoring programs that matched on other criteria (Dubois et al., 2011). Match similarity can be divided in three categories: deep-level, surface-level, and experiential-level similarities (Eby et al., 2013)—with deep-level similarity showing the most positive effect on youth and match outcomes. In this dissertation, similarity with respect to disability has been hypothesized as a similarity related to experiential or deep level similarity, as sharing a disability could result in shared life experiences and similar worldviews, beliefs, and values. To test this hypothesis, mentees were randomly assigned to having a mentor with or without a visual impairment. Differences were studied for both match outcomes (Chapter 4) and youth outcomes (Chapters 5 and 6).

A total of 36 mentors participated in the study; half of them had a visual impairment. Significant differences for background characteristic and for pre-match cognitions were found between mentors with and without a visual impairment. Mentors without a visual impairment were younger and more likely to be educated or working in a helping profession. Mentors with a visual impairment more often had a relatively fixed mindset and more unrealistically positive expectations (Chapter 4). For the 76 adolescents with a visual impairment who participated in this study, no differences were found between those randomized to either the mentoring condition with a visual impairment, the mentoring condition with a mentor without a visual impairment, or the care-as-usual control group (Chapters 5 and 6).
Variables assessing match outcomes were relationship length, the total number of match meetings, the length of match meetings in hours, the strength of the mentoring relationship, and premature closure. For youth outcomes, the variables for social participation and psychosocial functioning described in Chapters 5 and 6 were used.

Almost two-thirds of all mentors believed that match similarity with respect to disability would enhance the effect of a mentoring program. However, the results for match outcomes showed that matches including a mentor with a visual impairment were significantly more likely to end in premature closure than matches including a mentor without a visual impairment (Chapter 4). Based on this finding, it could be concluded that disability similarity did not enhance the mentoring program practices. Nevertheless, some positive results were found for youth outcomes (social participation and psychosocial functioning). Mentees matched to mentors with a visual impairment increased more on satisfaction with social support compared to mentees matched to mentors without impairments and youth in the care-as-usual control group (Chapter 5). This could lead to the conclusion that spending time with members of the same underrepresented group does enhance the effect of the mentoring program. One potential explanation is that interactions and insight in the lives and experiences of “peers” from the same subpopulation provide more satisfying views of oneself, as it is easier to identity oneself with the role model. However, conclusions should be made with caution, as no differences between the two mentor groups were found for the other social participation outcomes (Chapter 5) nor for psychosocial functioning (Chapter 6). These findings are in line with one earlier study examining the effect of matching mentees to mentors who share the same disability challenges (Sowers et al., 2016).

In conclusion, disability similarity may not represent experiential or deep-level similarity but operates more as a superficial factor. Although the small sample size limits the generalizability of this finding and additional insight is needed in the distinction between the three categories of match similarity, it can be assumed that with additional pre-match training, mentors with a visual impairment could be as effective as mentors without impairments.

**Are Intra- and Interpersonal Factors Associated with Psychosocial Functioning?**

Because mentoring did not show large benefits for adolescents with a visual impairment, additional research further explored mechanisms that could enhance the social development of young people with a visual impairment. The primary aim of Chapter 7 was to investigate how intra- and interpersonal factors during adolescence predicted psychosocial functioning in young adulthood. Analyses were conducted on data from a national dataset of young people with a visual impairment (N = 96, mean age 17.83 in 2005). We used data from participants who were interviewed at two different time points in 2005 and 2010. General linear regression and mediation analyses were used to examine the role of intra- and interpersonal factors in adolescence on loneliness later in life. Intrapersonal factors were assessed by the big five personality traits. Interpersonal factors were assessed by social competence and satisfaction with social support.

Analyses showed that both intra- and interpersonal factors in adolescence were associated with psychosocial functioning later in life (Chapter 7). Adolescents with a visual impairment who were
more emotionally stable and had higher social competence scores were less lonely as young adults. In addition, the mediation results showed that emotionally unstable adolescents reported lower social competence and, therefore, were lonelier in young adulthood. This suggests that social competence may be a mechanism through which change in psychosocial functioning can be achieved. Future interventions aiming to improve opportunities for young people with a visual impairment might therefore be beneficial when addressing social competence.

Strengths and Limitations
In this dissertation, multiple longitudinal studies have been presented that contribute to knowledge of the developmental pathways of young people with a visual impairment. Previous research examining various outcomes of social participation and psychosocial functioning in young people with a visual impairment were mostly conducted with cross-sectional designs or in longitudinal studies of shorter duration (Elsman, Van Rens, & Van Nispen, 2016; Gold, Shaw, & Wolffe, 2010; Greguol, Gobbi, & Carraro, 2015; Huure & Aro, 1998; Kef, 1997; Kef & Bos, 2006; Kef, Hox, & Habekothé, 2000; McDonnall, 2010b; Pinquart & Pfeiffer, 2011a, 2014; Salminen & Karhula, 2014). In the second chapter of this dissertation, a 20-year longitudinal design spanning almost the entire period of adolescence and young adulthood was used, which allowed us to study developmental trajectories of social support and its relationship with loneliness during a period characterized by important social developmental changes (Nelson, Leibenluft, McClure, & Pine, 2005; Arnett, 2000). A longitudinal design covering multiple life stages is especially salient when studying the population of this current study, as previous research has shown that young people with a visual impairment experience developmental delays in social functioning across the transition into adulthood. Furthermore, longitudinal studies created the possibility to use strong methodological techniques such as latent growth curve models (Chapter 2) that permit individual cases to have a unique trajectory of change over time (Duncan, Duncan, & Strycker, 2013). Moreover, the number of participants participating in our longitudinal cohorts from all over the country is (inter)nationally unique within this low-incidence population.

Another strength of this dissertation is that in the RCT study an experimentally controlled design was used with two experimental conditions and one care-as-usual control condition. This design allowed us not only to study whether mentoring outperformed care-as-usual, but also whether either one of the mentoring conditions outperformed the other. Several studies have looked at the effectiveness of mentoring programs for youth at risk for several outcomes (Dubois et al., 2011). However, to our knowledge, Sowers et al. (2016) were the first who took it a step further and also examined the effect of match similarity by adding a third experimental condition to their RCT. However, they did not look at matching mentors to mentees from a similar subpopulation but examined the effect of match similarity based on the experience of having similar disability challenges (Sowers et al., 2016). The current study advanced the field, therefore, by testing match similarity for one specific disability on multiple outcome variables and by testing the effect of moderators and mediators. This provided us the possibility to investigate the underlying mechanisms of the mentoring program and for whom it might work best. Other strengths of this RCT study are that we: (a) followed the CONSORT guidelines (Schulz, Altman, &
Moher, 2010); (b) used a relatively long timeframe (18 months); (c) used multiple assessment methods (questionnaires and interviews); (d) used a variant of outcome measures that measured both subjective aspects of the social participation outcome variables as well as objective measures of performance.

The RCT design was a strength of the studies evaluating the mentoring program and addressed many threats to validity. Yet, the relatively small sample size limits the generalizability and replicability of the findings. The small sample size hampered the possibility of testing differences between the conditions and of modeling moderation and mediation effects with sufficient power. Due to deviations from random allocation, the sample size decreased, as matches that were not based upon randomization had to be removed from the analysis examining the impact of match similarity on youth outcomes. The smaller-than-planned sample size could be explained by the low prevalence of the study population. No accurate population-based data about the prevalence of young people with a visual impairment are available in the Netherlands; thus, the sample size calculations might not have been based on the actual prevalence and could have led to an overestimation of the number of participants available for the study. The overestimation of eligible participants often occurs within RCTs and has been described as the phenomenon of Lasanga’s Law (Gore, 1981; Van der Windt, Koes, Van Aarst, Heemskert, & Bouter, 2000). Furthermore, the RCT design of the study may also explain why less adolescents than expected signed-up for the study. The design, which led to a 33.5% chance of ending up in the care-as-usual control group, may have discouraged participants from participating in the study, especially those who specifically were seeking for support (Huibers et al., 2004).

A second limitation of the studies presented in this dissertation is the use of different samples. Although we believed that we recruited multiple similar samples of young people with a visual impairment by using similar inclusion and exclusion criteria, those recruited for participation in the RCT differed from the two longitudinal cohorts. Half (49%) of the participants participating in the RCT study of Chapters 4, 5, and 6 had comorbid problems, such as muscle diseases, problems with short-term memory, or had moderate-to-mild hearing problems. Less comorbid problems were reported by participants in the two longitudinal cohort studies (Chapters 2 and 7). In the first cohort starting in 1996 (Chapter 2), 30% had comorbid problems, and in the second cohort, starting in 2005, 37% had comorbid problems (Chapter 3). Problems with the selection of a homogenous population and the occurrence of comorbidity in the samples participating in an RCT have been found in other RCT studies as well (Fortin et al., 2006). This could possibly be explained by the fact that participants signing up for an intervention study are actively seeking support, and those actively seeking support might experience more often multiple problems. High levels of comorbidity could raise the questions of whether the sample participating in the RCT varied from those not in the study but willing to participate if the mentoring program would be offered in the future. However, it is thought that comorbidity levels create a sense of urgency for people to search support and, therefore, it would be likely that similar participants would sign up for the intervention as future participants. Furthermore, in the current study, moderator analysis for comorbidity showed no association with changes in any of the social participation outcome variables. Based on this result, comorbidity did not appear to challenge the external validity of the trial.

Another challenge of this dissertation was that a new community-based mentoring program for a low-incidence population was designed, implemented, and tested in a natural setting all at the same
time. The mentoring program was specifically designed for this study population and had never been tested before. Interventions tested in RCTs are often implemented within existing settings, such as medical centers or schools with professionals recruiting and performing the intervention (e.g., Stein et al., 2003). Alternatively, versions of previously studied programs tailored to the needs of a specific subpopulations have been implemented and tested in RCTs (e.g., Boekhout, Peels, Berendsen, Bolman, & Lechner, 2017; Schmidt et al., 2007). Testing interventions within clinical practice makes it easier to recruit participants and to implement the program compared to community-based interventions. It also might enhance the commitment of participants to the intervention, as the intervention content can be linked to preexisting motives, expectations, and goals of participants who sought support and entered the practice.

Another limitation is that within the mentoring study, a care-as-usual control group was used. Research has shown that the use of different control conditions leads to different effect estimates (Furukawa et al., 2014). Hence, the results of an RCT also depend on the choice of control condition. Through using a care-as-usual control group in this current study, less influence could be provided on what kind of treatment was received by the participants. In addition, the amount or source of support received by the control group could vary by person (Mohr et al., 2009). This can reduce the external validity and threaten the internal validity of the results of the trial. The use of a wait-list control group has several benefits over a care-as-usual control group. It reduces the number of drop-outs in the control condition and increases the likelihood of finding a larger effect size. However, due to practical burdens, such as a doubled timeframe and larger number of mentors who had to be recruited, a care-as-usual control group was thought to be beneficial for the current RCT study. Future mentoring research should consider the use of no-treatment or wait-list controls to study the effect of mentoring programs.

A final limitation of the studies presented in this dissertation is that in all studies, only self-reported data were used. Despite the prevalent use of questionnaires, interviews, and surveys in social sciences, several limitations of this method have been outlined. First, people tend to give socially desirable answers in self-reported data. This might be reduced by letting participants complete the questionnaires in private. However, the use of paper-and-pencil or web-based surveys could be challenging for people with a visual impairment. Therefore, in this dissertation, computer-assisted face-to-face and telephone interviews were used. Several sources were used to reduce social desirability such as avoiding sensitive topics, using forced-choice items as much as possible, and the training of (blinded) interviewers. Second, self-reported data might be influenced by the participants’ current mood status when filling out the questionnaires. To reduce this bias, we used multiple measure points over time in most studies.

**Implications**

**Scientific and Theoretical Implications**

More work needs to be done to experimentally evaluate programs that primarily address the social participation outcomes of adolescents with a visual impairment. Based on the ICF-framework and recent research on the construct of participation (Imms et al., 2016a), it can be assumed that multiple factors drive outcomes in participation. Different types of interventions, addressing different factors
related to participation, may therefore be effective in addressing social participation. In line with the findings of a systematic review on the effects of interventions aiming to improve participation (Aider et al., 2015), our findings also suggest that future researchers should consider the use of longitudinal qualitative study designs to assess subjective aspects of social participation instead of a research design with merely quantitative assessments. Because the construct of participation both concerns objective (e.g., performance and activity) and subjective (e.g., experiences and opinions) aspects, the use of only quantitative measures may provide an incomplete assessment of subjective participation outcomes. Even more nuanced evidence of social participation levels could be provided by using, for example, diary studies or multiple in-depth interviews that record the thoughts and experiences of participants. These methods more thoroughly assess the “involvement” aspect of participation, embedded in the World Health Organization’s definition of participation and strongly emphasized in the new conceptual framework for participation, called the family of Participation-Related Constructs (fPRC), by Imms and colleagues (2016b). However, before these methods can be used, future researchers also need to identify how involvement over time can be conceptualized in individuals.

From the results in Chapter 2, we can conclude that perceived social support from peers during adolescence is an important factor for the psychosocial functioning in later life of people with a visual impairment. Previous researchers have demonstrated that support from parents is also important for social, emotional, and general wellbeing (e.g., Cutrona et al., 1994; Franzoi, Davis, & Young, 1985; Meadows, Brown, & Elder, 2006; Mounts et al., 2006). Because our results do not support this association, it needs to be more carefully studied when this association may be expected to be found. In this current dissertation, only perceived and not actual provided levels of social support reported by parents themselves were examined. The assessment of actual support levels and the use of the multiple informant methods (reports of both parents, adolescents, and other important support figures) may create a better understanding of the associations between parent support and psychosocial functioning. In addition, these follow-up studies should also focus on the different types of support provided by parents. Previous research showed that particularly emotional support from parents contributed to psychological wellbeing (Merz & Considine, 2009; Morelli et al., 2015). Due to disability specific challenges, parents of children with a visual impairment may predominantly provide practical support reducing the positive effects of their emotional support. Furthermore, a comparison between parent support of youth with and without impairments and their parents should be made to acquire knowledge about the differences between these groups. These findings could shed a light on the potential existence of parental overprotection, which is often presumed by researchers and clinicians (e.g., Holmbeck et al., 2002; Friedman, Holmbeck, DeLucia, Jandasek, & Zebracki, 2009; Pinquart & Pfeiffer, 2011b) to be elevated in the parents of children with chronic illnesses and disabilities.

Unexpectedly, the RCT study described in Chapters 5 and 6 only revealed small benefits of a mentoring program for adolescents with a visual impairment on social participation and psychosocial functioning. The combination of the small average effect size of mentoring programs (Dubois et al., 2011) and the smaller-than-planned sample size in the current study could have prevented the identification of significant differences. Future research on mentoring should focus on examining specific mechanisms.
of mentoring programs that showed to have a medium to large effects. These results could provide opportunities to establish evidence-based kernels that enhance the average mentoring effect, which, in turn, increases the possibility to explore the effect of mentoring in various at-risk (low-incidence) populations. However, caution is needed for testing the effect of mentoring programs in populations with multiple risk factors. Previous studies have shown that reduced effects of mentoring can be found in youth who experience high interpersonal and environmental risk factors (Dubois et al., 2011; Raposa, Rhodes, & Herrera, 2016; Schwartz, Rhodes, Chan, & Herrera, 2011). This might raise the question whether other types of intervention might be more suitable and in need of further investigation. For example, a new more naturally and youth-directed community-based approach in which youth capitalize on their existing networks and cultivate helping relationships with caring adults in their lives has been recently established (Schwartz, Rhodes, Spencer, & Grossman, 2013). This strategy of supporting youth to connect with (new) people in their communities and train them in skills that encourage them to ask others for help should be an important direction for future research in youth with a disability. Another direction for future evaluations of programs for adolescents with a visual impairment could be studying the effectiveness of evidence-based practices provided by rehabilitation centers in the Netherlands to adolescents with a visual impairment, especially because the results of this dissertation show that mentoring did not outperform care-as-usual provided by these centers.

Rhodes’ model for mentoring (2002) suggested that mentoring is effective when two people are involved in a high-quality mentoring relationship based on mutuality, trust, and empathy. One important predictor of relationship quality, also described as a benchmark practice in the Elements of Effective Practice for Mentoring (EEPM; Garringer, Kupersmidt, Rhodes, Stelter, & Tai, 2015), is match similarity. The results of this dissertation add some evidence relevant to the debate on match similarity. However, for mentoring in general, future researchers should further explore similarity practices that enhance the effect of mentoring. Experimental studies, similar to the study design used in this dissertation, are required to test whether matching on other similarities, such as interests, hobbies, values, and beliefs, can enhance program effectiveness. This line of research will create knowledge about the conceptual construct of match similarity, adding new evidence for Rhodes’ (2002) model for mentoring.

**Practical Implications**

The work in this dissertation provides implications for practices addressing the needs of adolescents with a visual impairment in the Netherlands. Based on the findings in Chapter 2, showing that both initial levels and the rate of change of peer support during adolescents are associated with loneliness later in life, it can be suggested that rehabilitation and (special) education practices for young people with a visual impairment should not only focus on providing support and teaching them social skills on how to establish peer relationships, but also on how to maintain social relations. Previous research confirms that both creating and maintaining friends facilitate positive youth outcomes, such as academic perceptions and achievements, social competence, and wellbeing (Gifford-Smith & Brownell, 2003; Ladd, 1990). Based on the similarity-attraction theory, similarity plays an important role in choices for and the length of social relationships (Laursen, 2017). Therefore, adolescents with a visual impairment experiencing
difficulties with forming and maintaining peer relationships could be encouraged and supported by seeking companions who share constructive attributes. Knowledge of one's own personal traits, values, norms, and beliefs is a requirement for his/her ability to seek compatible others and should, therefore, also be addressed during practices for young people with a visual impairment.

Most adolescents with a visual impairment improved after they participated in the mentoring intervention. However, the experimental evidence failed to support effects on most of the social participation and psychosocial functioning outcomes. Therefore, we cannot conclude that the implementation of the mentoring program would effectively enhance care-as-usual provided by rehabilitation and education centers. The overall small effect of mentoring, mainly studied in the United States, decreases the likelihood of finding statistically significant effects in a small sample. Earlier research on evidence-based psychotherapy and care-as-usual also showed that the effect size was lower when interventions, demonstrated to be effective in North America, were tested in other countries than the United States (Weisz et al., 2013). High levels of basic care provided in the Netherlands for young people with a visual impairment, due to the social security system, could reduce the added value of mentoring on youth outcomes. Therefore, clinical practitioners should be cautious with implementing evidence-based interventions that have not been tested in their own societal context. These findings also highlight the importance of adapting effective interventions to the cultural context, which has been shown in previous research (Benish, Quintana, & Wampold, 2011).

The positive effect of match similarity in general on mentoring programs has been shown in previous studies (Dubois et al., 2011). However, the debate on the concept of match similarity is still ongoing. Based on the results presented in this dissertation and a previous study (Sowers et al., 2016) exploring the benefits of disability matching for youth outcomes, we can conclude that only selecting mentors with a disability for mentees with a disability is not a practice that should be included in mentoring programs addressing the needs of young people with a disability. Both mentors with and without disabilities could be effective mentors, as long as they are matched with mentees who share other similarities such as interests, beliefs, and values (Eby et al., 2013). However, our results do underscore the importance of training mentors before they are matched to mentees. Training can prepare mentors to engage in appropriate mentoring roles, avoid boundary violations, and calibrate their expectations, which make them better and more self-efficacious mentors (Kupersmidt, Stelter, Rhodes, & Stump, 2017). Mentors with a visual impairment might need additional pre-match training focused on building a growth mindset, supporting them to cope with challenges that can naturally evolve in the course of the mentoring relationship. Future mentoring programs, especially those serving young people with a disability, could also consider focusing their recruitment and screening efforts on enrolling mentors with previous educational or vocational experience in a helping profession.

Even within the small sample of the RCT study, the mentoring program was effective in enhancing participants’ satisfaction with the psychological needs as identified in the self-determination theory (Deci & Ryan, 2000; 2008). An increase in autonomy satisfaction and competence satisfaction was found in adolescents participating in the mentoring program, two factors that can be specifically challenging for people with a disability (Holmbeck et al., 2002; Huurre & Aro, 1998). Given the importance of the basic psychological needs for growth, health, wellbeing, and intrinsic motivation, the findings suggest
that contributing to the satisfaction of these needs may be feasible. We recommend future practice for adolescents with a visual impairment to integrate these constructs in the services provided. Previous studies have demonstrated positive effects of treatments based on the concepts of the self-determination theory for physical and mental health outcomes (Ryan, Patrick, Deci, & Williams, 2008; Vansteenkiste & Soenens, 2015). Adaptations of the current mentoring program with a stronger focus on autonomy support, structure, and interpersonal involvement, likely to nourish satisfaction with the three basic psychological needs, might be needed to facilitate it as an additional program within rehabilitation and (special) education centers. Further, the use of motivational interviewing and self-regulation skill training have showed to be promising in promoting psychological needs satisfaction (Frielink, Schuengel, Kroon, & Embregts, 2015; Silva, Marques, & Teixeira, 2014).

Finally, the findings of Chapter 7 suggest that social competence might be a promising mechanism for future interventions supporting young people with a visual impairment while transitioning into adulthood. A broad range of research has assessed social competence and studied the effect of different approaches to enhance social competence for youth with a disability (e.g., Alwell & Cobb, 2009; Pinquart & Pfeiffer, 2014; Milligan, Phillips, & Morgan, 2016; Stichter, et al., 2010). For example, for young people with an intellectual disability, group-based social skill interventions have been identified as effective treatment (Milligan et al., 2016). Group settings provide naturalistic and experimental opportunities for social engagement. For youth with autism, interventions targeting emotion recognition have shown to be effective (Stichter et al., 2010). Because having a visual impairment could lead to challenges in social skills (e.g., an inability to pick up nonverbal cues, recognize facial expressions, and turn taking in conversation) and cognition (e.g., emotion-regulation, social information processing, executive functions, and theory of mind), both aspects may be addressed in future rehabilitation practices to foster change in social participation.

**General Conclusion**

Support for adolescents with a visual impairment addressing their social participation is necessary to provide them with opportunities to live a fulfilling life. Although mentoring was thought to be a potential tool addressing their needs, the results of the RCT study within this dissertation, comparing mentoring to care-as-usual, do not fully support this hypothesis (Chapters 5 and 6). Mentoring did improve satisfaction with several social participation and psychosocial outcomes (satisfaction with social support and satisfaction with two psychological needs defined by the self-determination theory: autonomy and competence), which led to the conclusion that mentoring may be particularly effective in enhancing subjective aspects of social participations and psychosocial functioning. The findings of this dissertation also underscore the importance of social engagement in peer relationships in adolescents with a visual impairment (Chapters 2 and 5) and suggest that addressing social competence may be considered a mechanism of change in future interventions (Chapter 7).

Implications drawn from the studies in this work were mostly limited to the level of individuals with a visual impairment. However, social participation includes more than one person and is based on interactions with the community. Treatments that only address change within the individual may not
be sufficient for young people with a visual impairment to successfully participate in society. Change on a societal level, with interventions focusing on the environment, such as reducing stigmatization or discrimination and improving legislation or accessibility for people with a visual impairment, might also be needed to enhance social participation. Devaluing societal views on and negative affective responses to people with disabilities limits their avenues toward social and emotional connectedness with society, which, in turn, limits their opportunities for social participation. Therefore, a community-based approach, referring to the settings of interventions addressing individual change but also to specific interventions that fosters change in the community itself, are still an important direction for supporting youth with a visual impairment. Our findings in Chapter 2 show that this is especially salient for young people with a visual impairment transitioning into adulthood.

The general aim of this dissertation was to gain in-depth insight into avenues for supporting the social participation of adolescents with a visual impairment. After the trajectories of “natural” social support levels were modelled within a timeframe of 20-years and related to psychosocial functioning, a need for additional support was revealed. To prevent young people with a visual impairment from experiencing a gap in social support during adulthood, a community-based mentoring program was designed and tested for its effect on enhancing social participation and psychosocial functioning. The mentoring program did not outperform care-as-usual on the majority of the outcome variables, and mentors with a visual impairment were generally as effective as mentors without impairments. Moreover, additional research within a five-year timeframe showed that social competence could be a mechanism through which change in psychosocial functioning may be achieved. These results are important because they provide valuable insights into how to support young people with a visual impairment to provide them opportunities to live a fulfilling life within society.