



Social support and depression of adults with visual impairments



Konstantinos Papadopoulos^{a,*}, Doxa Papakonstantinou^{a,1},
 Anthony Montgomery^{a,2}, Argyro Solomou^{b,3}

^a Department of Educational and Social Policy, University of Macedonia, 156 Egnatia Street, P.O. Box 1591, 54006 Thessaloniki, Greece

^b Public School, Ministry of Education, Greece

ARTICLE INFO

Article history:

Received 1 November 2013

Received in revised form 18 February 2014

Accepted 21 February 2014

Available online 27 March 2014

Keywords:

Depression

Visual impairment

Social support

ABSTRACT

Relatively little research exists with regard to the relationship between social support and depression among adults with visual impairments. Such a gap is noteworthy when one considers that individuals become more dependent on others as they enter middle and late adulthood. The present research will examine the association between social networks, social support and depression among adults with visual impairments. Seventy-seven adults with visual impairments participated in the study. Depression, social network and emotional/practical social support were measured with self-report measures. Additionally, the degree to which emotional/practical social support received were positive or negative and the ability of respondents to self-manage their daily living were assessed. Less than a third of respondents scored above the threshold for depressive symptoms. Depressive symptoms were not related to gender or vision status. Depression was correlated with age, educational level, less positive practical support, more negative practical support and more negative emotional support, with lower perceptions of self-management representing the most robust predictor of depression. Age moderated the relationship between depression and self-management, and between depression and negative emotional support. Lower perceptions of self-management and negative emotional support were significantly associated with depressive symptoms.

© 2014 Elsevier Ltd. All rights reserved.

1. Introduction

Depression is a common response for individuals who have underwent significant vision loss (Evans, Fletcher & Wormald, 2007; Hayman et al., 2007; Horowitz, Reinhardt, Boerner & Travis, 2003). Adults with visual impairments report more depressive symptomatology than sighted adults (O'Donnell, 2005). Older adults with visual impairments are also more likely to suffer from depression than the general population (Hayman et al., 2007). Indeed, depression becomes even more

* Corresponding author. Tel.: +30 2310 891403; fax: +30 2310891388.

E-mail addresses: kpapado@uom.gr, k.s.papado@gmail.com (K. Papadopoulos), klerip@uom.gr (D. Papakonstantinou), antmont@uom.gr (A. Montgomery), a.solomou@gmail.com (A. Solomou).

¹ Tel.: +30 2310 891407.

² Tel.: +30 2310 891308.

³ Tel.: +30 6982720067.

significant as adults with visual impairments grow older, with prevalence rates for depression among older people ranging from 25 to 45% compared to <20% among those with normal vision (Evans et al., 2007). However the question of whether severity of visual impairment is associated with depression is not clear. It is noted that visual acuity is not significantly associated with depression for adults with visual impairments, which leads to the suggestion that the degree of severity of their disability may not influence their well-being (Guerrero & Smedema, 2011). It is also suggested that although visual function is associated with depressive symptoms for older adults with severe visual impairment, visual acuity is not (Hayman et al., 2007). On the other hand Branch, Horowitz, and Carr (1989) report a positive correlation between the decline of visual acuity for elderly individuals with visual impairment and the increase of the depressive symptoms (Branch et al., 1989). The picture is mixed, but longitudinal research indicates that vision loss is a robust predictor of both the onset and persistence of depression, even beyond dual sensory loss (Chou, 2008). Given that social relationships can influence the well-being of people (Ibarra-Rovillard & Kuiper, 2011), social support represents a potential mechanism by which the connection between vision loss and depression can be better understood.

There is considerable debate as to the appropriate way to define social support (e.g., Shinn, Lehmann, & Wong, 2010). In general social support, which has been defined in many different ways, refers to the type of assistance/help that individuals receive or expect to receive from those who come into contact with them in any way (Papakonstantinou & Papadopoulos, 2010). Social support and social network composition represent potential avenues by which researchers can better understand the link between depression and vision loss. On the positive side, social support includes; perceived support, the belief that social support will be available when needed (Lindorff, 2005), and received support, the support an individual actually receives or has reported receiving in a specific situation or in a specific period from specific persons. However, social support can also be perceived negatively. Thus, the idea that care is available might be comforting (Bolger, Zukerman & Kessler, 2000), while the provision of help might be potentially disabling in that it highlights the level of dependence (Bolger et al., 2000). In the present study, social support was measured by first asking respondents to identify their support networks, and then asking them to rate these networks in terms of both emotional and practical support (both positive and negative) and their satisfaction with the support received.

More specifically, in terms of the present study, practical support is defined as informational support, as well as the provision of services and materials (Chang & Schaller, 2000) and tangible resources, such as physical aids and transportation. Emotional support is defined as affective support and includes expressions of concern or feelings of being accepted, respected, included and having one's emotions acknowledged (Brough and Pears, 2004; Chang & Schaller, 2000).

1.1. Previous research among individuals with visual impairments

There is relatively little research that specifically assesses the relationship between social support and depression among adults with visual impairments. In general social support appears to be an 'affective buffer' against depression as a result of vision loss (Burmedi, Becker, Heyl, Wahl, & Himmelsbach, 2002). Guerrero and Smedema (2011) suggested that low levels of social support lead to higher levels of depression for adults with visual impairment. Longitudinal research indicates that friendship support is associated with better adaptation and less depression over a three year rehabilitation period (Reinhardt, Boerner, & Horowitz, 2009). Reinhardt and Blieszner (2000) found that for older adults with visual impairments having a spouse was associated with higher perceived affective and instrumental family support. Conversely, social support can be experienced negatively whereby individuals experience support as insensitivity, overprotection (Chang & Schaller, 2000; Cimarolli & Boerner, 2005), criticism, anger, hostility (Ruehlman & Karoly, 1991) or inappropriate help. Not surprisingly, negative social support is associated with depression (Cimarolli, 2006; Cimarolli & Boerner, 2005). For people with visual impairments, perceived overprotection can lead to a less optimal adjustment and lower levels of 'environmental mastery' (Cimarolli, Reinhardt, & Horowitz, 2006). The way that our social networks evaluate us plays a significant role with regard to the types of social support that we receive. Not surprisingly, people with disabilities are more likely to be socially stigmatized and therefore negatively regarded (Carter & Feld, 2004).

Finally, the degree to which individuals with visual impairments can handle their world is of critical importance to their quality of life. In the present study, the degree to which individuals can self-manage will be assessed. Our approach to self-management is rooted in the definitions of Lorig and Holman (2003), who define it as being characterized by an individual taking an active role in decisions that affect their health and demonstrating responsibility for the day-to-day management of their lives.

The aim of the present study is to examine the relationship between depression and social networks/social support of adults with visual impairments. Specifically, the present study will investigate the relationship between depression and social networks, received support and satisfaction from received support.

2. Method

2.1. Participants

The participants were selected from the members of the Panhellenic Association of the Blind. Initially, a random selection of 110 adults with visual impairments was contacted by phone in order to invite them to participate in the study. From this group 77 (47 men and 30 women) individuals agreed to participate. Respondents were aged 18–56 (mean = 33.47,

SD = 11.26). Forty-four (57.1%) had blindness or severe visual impairment (visual acuity <20/400) and 33 (42.9%) were individuals with low vision (20/200 > visual acuity > 20/400). For thirty-four (44.2%) participants vision loss occurred congenital and for 43 (55.8%) adventitiously. Of the 43 who lost their sight adventitiously, four people lost their sight between the ages of 3 and 5, five lost their sight between the ages of 6 and 10, thirteen lost their sight between the ages of 11 and 20, and twenty-one lost their sight from the age of 20 onwards (mean age at loss of sight 11.72, SD = 8.548; mean number of years since sight was lost at time of study = 21.42, SD = 11.989). In respect to educational level, 28 (36%) subjects were university graduates, 14 (18%) were still attending university, 23 (31%) had graduated from high school, 8 (10%) had completed junior high school and 4 (5%) were elementary school graduates.

2.2. Instruments – procedure

In the present study, the ethical principles of Declaration of Helsinki were followed (World Medical Association, 2013). Additionally, consent was obtained from the individuals, using the appropriate forms and according to the procedure suggested by the World Medical Association (2013).

The 21-item Beck Depression Scale (BDI-I; Beck, Ward, Mendelson, Mock & Erbaugh, 1961) and a self-constructed questionnaire measuring social network, social support, and satisfaction from support, were employed in the research. The limited research on adults with visual impairments and the fact that such research was rarely conducted in Greece suggested that the construction of a context specific questionnaire would be appropriate. In previous research, we addressed a social network, social support and satisfaction from support questionnaire for Greek adults with visual impairments (Papakonstantinou & Papadopoulos, 2009). In the present study, we used a modified version of the questionnaire developed by Papakonstantinou and Papadopoulos (2009). The only difference between the version used in the present study and the original version of questionnaire developed by Papakonstantinou and Papadopoulos (2009) is the support groups mentioned in the items. In Papakonstantinou and Papadopoulos' research there were four support groups (colleagues with visual impairments, sighted colleagues, employers or supervisors with visual impairments, and sighted employers or supervisors), while in the present study there are 4 support groups: (1) close family environment (parents, brothers/sisters, grandparents), (2) kin (extended family members), (3) friends, (4) fellow-students, teachers, colleagues, members of unions, neighbors and therapists. This change has been made because the present research concerns the total actual social network of individuals with visual impairments and the social support they receive from their social network, whereas the study of Papakonstantinou and Papadopoulos (2009) concerned the social network and the social support of individuals with visual impairments in their workplace. The social network of the workplace is a subset of the active social network.

The questionnaire used in the study of Papakonstantinou and Papadopoulos (2009) (therefore the questionnaire of the present study as well) was based on the Social Support Questionnaire (SSQ; Sarason, Levine, Basham, & Sarason, 1983; Sarason, Sarason, Shearin, & Pierce, 1987), the Social Network Map, and Social Network Grid (Tracy & Whittaker, 1990). The Social Network Grid is actually part of the Social Network Map. The Social Network Map is a useful instrument to collect information about the network's total size and composition, and provides important information about the nature of personal relationships (Kemp, Whittaker, & Tracy, 1997). The Social Network Map was used by Kef for the questionnaire with adolescents with visual impairments in her research (Kef, 2002). Kef employed a short form of this questionnaire, after having made the necessary adaptations for use with individuals with visual impairments. The Social Network Grid used by Kef includes questions on perceived and received practical and emotional support. Moreover, Kef (2002) added two questions about satisfaction with practical and emotional support. The SSQ assesses two aspects of social support: (a) the perceived availability of social support and (b) the degree of satisfaction with social support, with responses graded from 1 (very dissatisfied) to 6 (very satisfied) (Sarason et al., 1983). Our questionnaire was also designed to measure social support and the degree of satisfaction, but it was different from the SSQ insofar as it measures both perceived and received social support.

Social networks, social support, and satisfaction from support. The first part of the questionnaire focused on the assessment of social network's range. Structural aspects of social networks were assessed by assessing the number of people in their networks. Respondents were prompted with the following network groupings: (1) close family environment (parents, brothers/sisters, grandparents), (2) kin (extended family members), (3) friends, (4) fellow-students, teachers, colleagues, members of unions, neighbors and therapists. Participants were instructed not to include a person twice in the network groups.

The second part of the questionnaire evaluated social support. In terms of social support identification, the respondents answered 16 closed questions. Specifically, in the first 4 questions the subjects were asked to rate on a range of 0 (none) to 10 (a great deal) the amount of *positive practical support* they receive or expect to receive from each of the four network groups (previously mentioned). In the next twelve questions the subjects were asked to state the range of *positive emotional* (4 questions), *negative practical* (4 questions), and *negative emotional* (4 questions) they received from the four groups. For example, the question on positive practical support read as follows: 'On a scale of 0 (none) to 10 (a great deal) where would you rate the positive practical support you receive, or will receive when required, from...?' Prior to asking respondents to rate received support, the researcher read out two texts, explaining the meaning of positive and negative support, both practical and emotional, while also offering various examples of these forms of support, such as 'Refusing to provide information to individuals with visual impairment on matters of their concern' and 'Not realizing when individuals with visual impairment start needing help with practical matters' as forms of negative practical support or 'Being distant and avoiding individuals

with visual impairment' and 'Being indifferent to what individuals with visual impairment feel or need' as cases of negative emotional support. Thus, respondents provided feedback on positive practical, positive emotional, negative practical and negative emotional social support. The texts are based on findings from previous studies regarding the forms of positive and negative support received by individuals with visual impairments (Chang & Schaller, 2000; Cimarolli & Wang, 2006; Papakonstantinou & Papadopoulos, 2010).

The third section addressed the assessment of satisfaction from support. This part consisted of 8 closed-ended questions. The subjects were asked to rate on a range of 0 (none) to 10 (a great deal) how satisfied they were with the social support they received from their social network. Each question corresponded to one of the four groups and the two forms of support (practical and emotional). For example, the question on practical support read as follows: 'How satisfied are you with the practical support you receive from...?'

Demographic/personal data of the participants (gender, age, age at loss of sight, vision status, educational level, self-management, and ability of independent movement) were also collected. For self-management, respondents answered on an 11-point scale (0 = not at all and 10 = a great deal) "To what degree, can you self-manage yourself". The question came with a text which contained the definition and examples of self-management. This kind of scale was chosen because it provides for a mean grade (the grade 5). For independent movement, respondents answered on a 5-point scale ("never", "a few times", "sometimes", "most of the times" and "always") "how often they move independently – without being helped by a sighted guide – in an outdoor space".

2.3. Reliability and validity

As mentioned, the questionnaires have been used in previous research. However, in the interests of rigor, the reliability and validity information of the questionnaires used in the present were as follows: *The test-retest reliability coefficients* (10 days) regarding the range of social networks, positive practical support, positive emotional support, negative practical, negative emotional, satisfaction with the practical support, satisfaction with the emotional support, respectively, were as follows: $r = .966$, $r = .788$, $r = .944$, $r = .967$, $r = .929$, $r = .736$, and $r = .889$. *Cronbach's alpha coefficients* regarding positive practical support, positive emotional support, negative practical, and negative emotional support, respectively, were as follows: $\alpha = .78$, $\alpha = .74$, $\alpha = .77$, and $\alpha = .81$. In terms of *convergent validity* practical positive support was positively correlated with positive emotional support ($r = .782$, $p < .01$), and negative practical support correlated positively with negative emotional support ($r = .961$, $p < .01$).

The correlations between practical/emotional support and satisfaction from support were as follows: positive practical support and the satisfaction from practical ($r = .547$, $p < .01$), and with the overall satisfaction from support ($r = .480$, $p < .01$); positive emotional support and satisfaction from emotional ($r = .590$, $p < .01$) and with the overall satisfaction from the support ($r = .547$, $p < .01$); negative emotional support and satisfaction from emotional support ($r = -.238$, $p < .05$) and the overall satisfaction from the support ($r = -.234$, $p < .05$); and negative practical support and satisfaction from practical support ($r = -.199$, $p = .082$), and with overall satisfaction from support ($r = -.221$, $p = .054$).

3. Results

Scores of the respondents on the BDI-I ranged from 0 to 25 ($M = 6.55$, $SD = 5.73$). A score of at least 10 on the Beck Depression Inventory is the generally accepted threshold for the indication of depressive symptoms (Aben, Verhey, Lousberg, Lodder, & Honig, 2002). Moreover, the stratification of the severity of depressive symptomatology in the Greek population is the following (Donias & Demertzis, 1983): (a) 0–9 = no depressive symptoms, (b) 10–15 = mild depressive symptoms, (c) 16–23 = moderate depressive symptoms, and (d) more than 24 = severe depressive symptoms. The number of respondents in each category was as follows; no depressive symptoms ($N = 54$), mild depressive symptoms ($N = 18$), moderate depressive symptoms ($N = 3$), severe depressive symptoms ($N = 2$). In terms of independent movement, twenty-eight participants reported that they "always" moved independently (without a sighted guide), 32 that they moved independently "most of the times", 10 "sometimes" and 7 "a few times". The mean score for self-management was 8.13 (minimum = 5, maximum = 10, $SD = 1.53$). Demographic information on respondents is presented in Table 1. In present study, ratings for social support were based on total scores across the following network groupings: (1) close family environment (parents, brothers/sisters,

Table 1
Demographic details of the respondents.

	Age	Gender		Age at onset		Education				
		Men	Women	Cong.	Advent.	1	2	3	4	5
Severe V.I.	34.4	27	17	13	31	2	3	12	12	15
Low vision	32.2	20	13	21	12	2	5	11	2	13

Note: Age = mean age, Education: 1 = elementary school graduates, 2 = junior high school graduates, 3 = high school graduates, 4 = university students, 5 = university graduates. Cong. = Congenitally, Advent. = Adventitiously.

Table 2
Positive and negative support by group.

	Group 1		Group 2		Group 3		Group 4	
	M	SD	M	SD	M	SD	M	SD
Positive-practical	8.34	2.54	5.16	3.53	7.22	2.77	6.19	2.57
Positive-emotional	8.18	2.82	6.28	3.28	7.50	2.81	5.60	2.81
Negative-practical	.87	1.70	2.69	3.16	1.76	1.92	2.30	1.66
Negative-emotional	.89	1.80	2.76	3.09	1.65	2.04	2.42	2.01

Note: Group 1 = close family environment (parents, brothers/sisters, grandparents); Group 2 = kin (extended family members); Group 3 = friends; Group 4 = fellow-students, teachers, colleagues, members of unions, neighbors and therapists.

Table 3
Correlation coefficients between depressive symptoms and various variables.

	Depressive symptoms
Gender	-.039
Vision status	.041
Education level	-.267*
Age	.348**
Independent movement	-.123
Age of vision loss	-.019
Self-management	-.377**
Range of social network	-.054
Positive-practical	-.276*
Positive-emotional	-.197
Negative-practical	.298**
Negative-emotional	.278*
Satisfaction from practical	-.387**
Satisfaction from emotional	-.152

* $p < .05$.

** $p < .01$.

Table 4
Multiple regression for variables as predictors of depression.

Variable	B	Std. Error	Beta	<i>t</i>	<i>p</i>
Age	.052	.056	.103	.935	.353
Education	-.843	.470	-.179	-1.766	.077
Self-management	-1.214	.381	-.323	-3.185	.002
Positive practical	-.295	.318	-.110	-.928	.357
Negative practical	.568	.357	.162	1.588	.117
Satisfaction from practical support	-.699	.422	-.204	-1.656	.102

Note: Adjusted $R^2 = .308$, $p < .01$, ns = not significant.

grandparents), (2) kin (extended family members), (3) friends, (4) fellow-students, teachers, colleagues, members of unions, neighbors and therapists. However, in the interest of being exhaustive the mean scores and standard deviations per group are provided in Table 2.

Table 3 presents the Pearson (r) correlation coefficients between the score on the BDI-I and all other variables. Significant associations were found with depressive symptoms and age ($r = .348$, $p < .01$), educational level ($r = -.267$, $p < .01$), self-management ($r = -.377$, $p < .01$), positive practical support ($r = -.276$, $p < .05$), negative practical support ($r = .298$, $p < .01$), negative emotional support ($r = .278$, $p < .05$) and satisfaction from practical support ($r = -.387$, $p < .01$). No significant associations were found between depressive symptoms and age at loss of sight, gender, vision status (blindness vs. low vision), ability of independent movement, range of social network, positive emotional support, and satisfaction from emotional support.

Then, the variables that correlated with the score on the BDI-I were included in two separate linear multiple regression analyses with depression as the dependant variable (see Tables 4 and 5). These variables were age, educational level, self-management, positive practical support, negative practical support, negative emotional support, and satisfaction from practical support. The high correlation between negative practical support and negative emotional support recommend the need for two separate regression analyses; one with negative practical and one with negative emotional. The analyses yielded an adjusted R^2 of .308 ($F = 6.645$, $p < .01$) and adjusted R^2 of .299 ($F = 6.398$, $p < .01$), respectively. In both regressions, self-management ($\beta = -.323$, $p < .01$; $\beta = -.326$, $p < .01$) was a significant predictor of depression (see Tables 4 and 5).

Table 5
Multiple regression for variables as predictors of depression.

Variable	B	Std. Error	Beta	t	p
Age	.055	.056	.109	.983	.329
Education	-.814	.472	-.173	-1.724	.089
Self-management	-1.223	.387	-.326	-3.164	.002
Positive practical	-.316	.320	-.118	-.986	.328
Negative emotional	.412	.332	.128	1.242	.219
Satisfaction from practical support	-.704	.425	-.205	-1.655	.102

Note: Adjusted $R^2 = .299$, $p < .01$, ns = not significant.

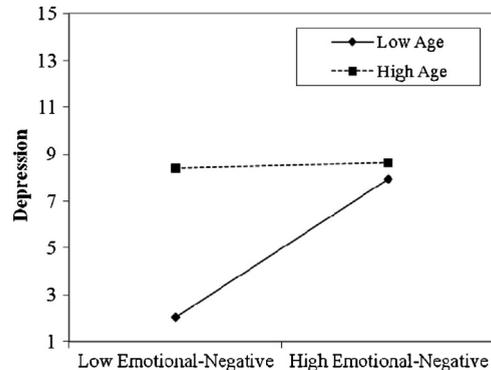


Fig. 1. Age, depression and emotional negative support.

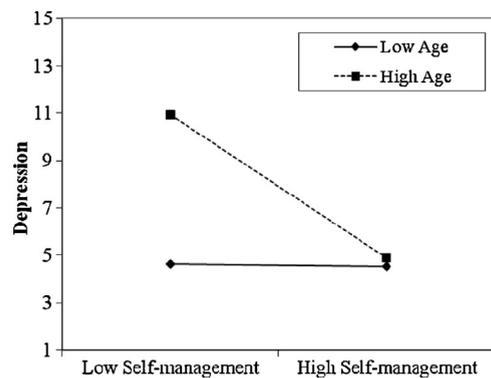


Fig. 2. Age, depression and self-management.

3.1. Interaction effects

It is possible that perceptions of social support and the relationship between social support and depression may be moderated by age, even within the current sample which includes late adolescents and late middle-aged adults. Therefore, interaction effects were assessed among the independent variables. Results indicated that age moderated the relationship between negative emotional support and depression ($t = 2.14$, $p < .05$), and between self-management and depression ($t = 3.11$, $p < .01$). Thus, lower age plays a protective factor with regard to the impact of both negative emotional support and self-management on depression (Figs. 1 and 2).

4. Discussion

According to the findings of this research, 70% of the participants with visual impairments showed no depressive symptomatology. An appreciable number (about 23.5%) showed mild depression, while even fewer people (6.5%) show moderate or severe depression. However, the generalizability of the results is severely limited by how the sample was ascertained and the very disparate characteristics of the participants. Depression often goes undetected and untreated in

people with visual impairments and it is difficult to distinguish chronic depression from a normal part of the grieving process associated with vision loss (Rovner, Casten, Hegel, Leiby, & Tasman, 2007).

In the present study, the individuals who are more capable in supporting themselves in their daily living and more self-sufficient, showed less depressive symptoms. However, there was some evidence that this relationship was moderated by age, meaning that younger people are more likely to have better self-management skills. This emphasizes the need to develop daily living skills and thus such skills training should be given priority by rehabilitation specialists, especially among older persons. Moreover, the moderation analysis showed that negative social support (as moderated by age) plays an important role in relation to depressive symptoms. These findings are consistent with previous studies showing satisfaction with available perceived support is negatively related to depression (Sarason et al., 1983, 1987). Previous research with visually impaired adults has shown that overprotection, which is a form of negative social support, can lead to higher levels of depression even when severity of vision loss and functional disability are controlled (Cimarolli, 2006). It has been shown (Cimarolli & Boerner, 2005) that adults with visual impairments who receive no support show the highest tendency for depressive symptoms followed by adults who receive only negative support, whereas adults with visual impairments who experience only positive support report the lowest levels of depressive symptoms followed by adults who receive both negative and positive support (Cimarolli & Boerner, 2005). The findings of this study suggest that rehabilitation counselors should identify the impact of received and perceived social support on psychosocial adjustment of individuals with visual impairments. The findings can also help professionals with regard to social networks and the way that individuals with visual impairment can benefit from positive types of social support which can contribute to the positive adaptation to stressful conditions, such as a chronic physical impairment, by making them feel psychologically better and able to cope with these events (Cimarolli & Boerner, 2005; Reinhardt, 2001; Schwarzer & Buchwald, 2004). Professionals can encourage behaviors and practices that constitute positive social support and especially positive practical social support that appears to be negatively correlated with depression and respectively discourage behaviors that constitute negative practical and emotional social support.

The present study has limitations. The study is cross-sectional and relies on self-report, thus causality cannot be inferred. This research included self-constructed questionnaires which have disadvantages in terms of reliability and validity. That said, the questionnaires were constructed using formats from established measures and performed (statistically) as expected with regard to our BDI measure. The present study used the original BDI measure, while some researchers advocate the use of the revised measure (BDI-II). The present study makes a distinction between positive and negative support, but the delivery of support maybe even more complex. For example, Vangelisti (2009) notes that people who do not want to receive support in a public context may experience positive outcomes if the support is delivered in a different way. The use of a global single item measure of self-management was limiting, and our research would have benefitted from the inclusion of functional measures (e.g., National Eye Institute Visual Function Questionnaire). Additionally, depression biases subjects' self-report of self-management abilities, such that people with depression might be more likely to overestimate their disability due to their depressive perceptions. We did not include a functional measure, but our self-management measure was significantly associated with depression while the measure of independent movement was not. Finally, the small numbers in the moderate and severe categories limit the power of our results and may indicate a "healthy worker effect", whereby individuals with severe depression were less likely to be respondents. The sample is a convenience sample and it is quite probable that the sample under-represents depressed people.

The present research represents an initial exploration of the sense of social support and depression for people with visual impairment. In terms of future questions, it would be useful to examine the different forms of positive and negative social support that individuals with visual impairments receive, as there are relatively few studies reporting such findings (Cimarolli & Wang, 2006; Papakonstantinou & Papadopoulos, 2009). Additionally, the present research focused on the individual with vision loss, however future research should account for the role of the family in providing support (Bambara et al., 2009). Finally, individuals with visual impairments who suffer from depression are also less likely to use vision rehabilitation services than those without depression (Horowitz & Reinhardt, 2006). Therefore, the present research prompts one to consider whether interventions that reduce depression would result in more rehabilitation service use. Such an outcome represents an important behavioral outcome for future research.

Future research should also study the differential relationships between depression and social support (positive and negative) with regard to particular family groups (family, friends, relatives etc.). For example, it would be interesting to examine how social support by friends is related to depression, compared to family or relatives.

References

- Aben, I., Verhey, F., Lousberg, R., Lodder, J., & Honig, A. (2002). Validity of the beck depression inventory, hospital anxiety and depression scale SCL-90, and Hamilton depression rating scale as screening instruments for depression in stroke patients. *Psychosomatics*, 43(5), 386–393.
- Bambara, J., Wadley, V., Owsley, C., Martin, R., Porter, C., & Dreer, L. E. (2009). Family functioning and low vision: A systematic review. *Journal of Visual Impairment and Blindness*, 103(3), 137–149.
- Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, 4(6), 561–571.
- Bolger, N., Zuckerman, A., & Kessler, R. C. (2000). Invisible support and adjustment to stress. *Journal of Personality and Social Psychology*, 79(6), 953–961.
- Branch, L. G., Horowitz, A., & Carr, C. (1989). The implications for everyday life of incident self-reported visual decline among people over age 65 living in the community. *Gerontologist*, 29(3), 359–365.
- Brough, P., & Pears, J. (2004). Evaluating the influence of the type of social support on job satisfaction and work related psychological well-being. *International Journal of Organisational Behaviour*, 8(2), 472–485.

- Burmedi, D., Becker, S., Heyl, V., Wahl, H.-W., & Himmelsbach, I. (2002). Emotional and social consequences of age-related low vision. *Visual Impairment Research*, 4(1), 47–71.
- Carter, W. C., & Feld, S. L. (2004). Principles relating social regard to size and density of personal networks, with applications to stigma. *Social Networks*, 26(4), 323–329.
- Chang, S., & Schaller, J. (2000). Perspectives of adolescents with visual impairments on social support from their parents. *Journal of Visual Impairment & Blindness*, 94(2), 69–84.
- Cimarolli, V. R. (2006). Perceived overprotection and distress in adults with visual impairment. *Rehabilitation Psychology*, 51(4), 338–345.
- Cimarolli, V. R., & Boerner, K. (2005). Social support and well-being in adults who are visually impaired. *Journal of Visual Impairment & Blindness*, 99(9), 521–534.
- Cimarolli, V. R., Reinhardt, J. P., & Horowitz, A. (2006). Perceived overprotection: support gone bad? *Journal of Gerontology: Social Sciences*, 61(1), 18–23.
- Cimarolli, V. R., & Wang, S. W. (2006). Differences in social support among employed and unemployed adults who are visually impaired. *Journal of Visual Impairment & Blindness*, 100(9), 545–556.
- Chou, K. L. (2008). Combined effect of vision and hearing impairment on depression in older adults: Evidence from the English Longitudinal Study of Ageing. *Journal of Affective Disorders*, 106(1–2), 191–196.
- Donias, S., & Demertzis, I. (1983). Validation of the Beck depression inventory. In G. Varfis (Ed.), *10th Hellenic congress of neurology and psychiatry* (pp. 486–492). Thessaloniki: University Studio Press.
- Evans, J. R., Fletcher, A. E., & Wormald, R. P. (2007). Depression and anxiety in visually impaired older people. *Ophthalmology*, 114(2), 283–288.
- Guerette, A. R., & Smedema, S. M. (2011). The relationship of perceived social support with well-being in adults with visual impairments. *Journal of Visual Impairment & Blindness*, 105(7), 425–439.
- Hayman, K. J., Kerse, N. M., La Grow, S. J., Woules, T., Robertson, C. M., & Campbell, J. (2007). Depression in older people: Visual impairment and subjective ratings of health. *Optometry and Vision Science*, 84(11), 1024–1030.
- Horowitz, A., & Reinhardt, J. P. (2006). Adequacy of the mental health system in meeting the needs of adults who are visually impaired. *Journal of Visual Impairment & Blindness*, 100, 871–874.
- Horowitz, A., Reinhardt, J. P., Boerner, K., & Travis, L. A. (2003). The influence of health, social support quality and rehabilitation on depression among disabled elders. *Aging & Mental Health*, 7(5), 342–350.
- Ibarra-Rovillard, M. S., & Kuiper, N. A. (2011). Social support and social negativity findings in depression: Perceived responsiveness to basic psychological needs. *Clinical Psychology Review*, 31(3), 342–352.
- Kef, S. (2002). Psychosocial adjustment and the meaning of social support for visually impaired adolescents. *Journal of Visual Impairment and Blindness*, 96(1), 22–37.
- Kemp, S. P., Whittaker, J. K., & Tracy, E. M. (1997). *Person-environment practice: The social ecology of interpersonal helping*. New York: Aldine de Gruyter.
- Lindorff, M. (2005). Determinants of received social support: Who gives what to managers? *Journal of Social and Personal Relationships*, 22(3), 323–337.
- Lorig, K. R., & Holman, H. R. (2003). Self-management education: History, definition, outcomes, and mechanisms. *Annals of Behavioural Medicine*, 26(1), 1–7.
- O'Donnell, C. (2005). The greatest generation meets its greatest challenge: Vision loss and depression in older adults. *Journal of Visual Impairment & Blindness*, 99(4), 197–208.
- Papakonstantinou, D., & Papadopoulos, K. (2009). Social support in the workplace for working-age adults with visual impairments. *Journal of Visual Impairment and Blindness*, 103(7), 393–402.
- Papakonstantinou, D., & Papadopoulos, K. (2010). Forms of social support in the workplace for individuals with visual impairments. *Journal of Visual Impairment and Blindness*, 104(3), 183–187.
- Reinhardt, J. P. (2001). Effects of positive and negative support received and provided on adaptation to chronic visual impairment. *Applied Developmental Science*, 5(2), 76–85.
- Reinhardt, J. P., & Blieszner, R. (2000). Predictors of perceived support quality in visually impaired elders. *Journal of Applied Gerontology*, 19(3), 345–362.
- Reinhardt, J. P., Boerner, K., & Horowitz, A. (2009). Personal and social resources and adaptation to chronic vision impairment over time. *Aging & Mental Health*, 13(3), 367–375.
- Rovner, B. W., Casten, R. J., Hegel, M. T., Leiby, B. E., & Tasman, W. S. (2007). Preventing depression in age-related macular degeneration. *Archives of General Psychiatry*, 64(8), 886–892.
- Ruehlman, L. S., & Karoly, P. (1991). With a little flak from my friends: Development and preliminary validation of the test of negative social exchange (TENSE). *Journal of Consulting and Clinical Psychology*, 3(1), 97–104.
- Sarason, I. G., Levine, H. M., Basham, R. B., & Sarason, B. R. (1983). Assessing social support: The social support questionnaire. *Journal of Personality and Social Psychology*, 44(1), 127–139.
- Sarason, I. G., Sarason, B. R., Shearin, E. N., & Pierce, G. R. (1987). A brief measure of social support: Practical and theoretical implications. *Journal of Social and Personal Relationships*, 4(4), 497–510.
- Schwarzer, C., & Buchwald, P. (2004). Social support. *Encyclopedia of Applied Psychology*, 3, 435–441.
- Shinn, M., Lehmann, S., & Wong, N. (2010). Social interaction and social support. *Journal of Social Issues*, 40(4), 55–76.
- Tracy, E. M., & Whittaker, J. K. (1990). The Social Network Map: Assessing social support in clinical practice. *Families in Society*, 71(8), 461–470.
- Vangelisti, A. L. (2009). Challenges in conceptualizing social support. *Journal of Social and Personal Relationships*, 26(1), 39–52.
- World Medical Association. (2013). *WMA declaration of Helsinki: Ethical principles for medical research involving human subjects* <http://www.wma.net/en/30publications/10policies/b3/index.htm>.