Self-efficacy and depression among low vision seniors

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Abstract. Previous research has indicated that depression is associated with visual impairment, especially in the elderly population. This relationship may, in part, be explained by a loss of independence as well as functional disability experienced by seniors in everyday activities as compared to people with normal vision. However, research has not investigated the possible mediating role of self-efficacy, a term describing individuals’ sense of their abilities and capacities to deal with conditions that life puts before them. The objective of the present study was to examine whether seniors with low vision who are depressed also display lower levels of self-efficacy. It was hypothesized that a person’s total score on the General Self-Efficacy Scale would remain a statistically significant predictor of his/her total score on the Center for Epidemiologic Studies – Depression Scale, after accounting for the effects of age and visual acuity. The acuity of each participant was evaluated using the Early Treatment of Diabetic Retinopathy Study (ETDRS) acuity chart. The two questionnaires were administered verbally and the participants were required to be fluent in French and have adequate hearing. Data were collected on 64 participants, ranging in age from 64 to 96 years and ranging in acuity from 20/70 worse to 20/900 or worse in their better eye. Given that patients with Low Vision are at a significant risk of developing depression, understanding underlying predispositions would be very helpful to rehabilitation specialists. This approach could alleviate some of the burden on the rehabilitation service providers by prioritizing clients with specific needs.

Keywords: Aging, Depression, Psychosocial issues, Quality of life, Self-efficacy, Low vision.

1. Introduction

As seniors age, a significant number of them may face health problems, specifically, different kinds of age-related eye diseases may develop. Unfortunately, vision impairment is one of the most common conditions affecting seniors; furthermore, it is also one of the most generally ignored or undertreated (Horowitz, 2004). For example, one of many vision impairments that seniors, men and women equally, over 65 may develop is Age-related Macular Degeneration (AMD) (Rovner & Casten, 2002). This eye disease damages the macula, the central area of the retina, and is usually characterized by a gradual decline in central vision; as a result, the person loses the ability to see details and is said to have Low Vision (LV) (Horowitz, 2004). This incomplete vision loss has an impact on the way seniors manage their daily tasks. Simple activities such as reading and distinguishing faces may become complex and, in some cases, impossible. AMD is progressive and irreversible and, unfortunately, the majority of AMD patients cannot be treated by conventional procedures such as surgery, medication or the prescription of standard glasses or contact lenses (Berman & Brodaty, 2006; Boerner, Reinhardt & Horowitz, 2006).

Vision impairment among seniors can have a profound impact on their psychological and physical well-being. Furthermore, LV problems are considered to be one of the four most important contributors to losing a sense of independence (Horowitz, 2004). The consequences of LV have a significant impact on emotional well-being, especially for the occurrence of depression (Blazer, 2003). By considering this high level of functional disability among seniors with AMD, it is not surprising that these individuals have a higher tendency to be depressed (Casten & Rovner, 2006).

The results of a study by Horowitz (2004) indicated that a strong relation exists between functional disability and depression among visually impaired seniors. According to large-sample studies, controlling for age, gender, race and co-morbidities, the data reveal that AMD considerably augments the chances that seniors will experience depression (Branch, Horowitz & Carr, 1989; Carabellese et al., 1993). The findings of these studies showed that older men and women with LV are two to five times more likely to experience depression than those who are normally sighted; as a result, LV is an important and stronger risk factor for the experience of

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depression than any other widespread health conditions that may develop throughout later life (Brody et al., 2001; Rovner & Casten, 2001).

These previous studies have a common limitation: they implied but did not specifically examine whether it is the level of self-efficacy experienced by individuals that may be related to their vulnerability to depression. Self-efficacy is a measure of the beliefs and convictions that someone holds about his/her skills to fulfill certain obligations. In addition to this, it affects individuals on many life levels. Self-efficacy has an impact on decision-making and on how much effort and determination someone is willing to invest in a task in order to solve problems (Smith & West, 2006). Self-efficacy in relation to vision has not been well documented; however, it has been investigated in other domains using various procedures. In a study by McAuley et al. (2006), researchers examined how self-efficacy can influence physical activity and quality of life among seniors, using two different scales. The Exercise Self-Efficacy scale was used to measure the beliefs held about the skills required to exercise 30 minutes or more every day, at least five days a week. The Self-Efficacy For Walking scale was utilized to evaluate the beliefs regarding effectively walking between 5 and 40 minutes and the speed at which they could complete this activity without any break. The outcomes of this study suggested that those with higher self-efficacy were able to walk for a longer period of time and more rapidly (McAuley, Konopack, Motl, Morris, Doerksen & Rosengren, 2006).

An association between a low-level of self-efficacy and depression has been supported. Blazer (2002) suggested that signs of depression such as sadness, solitude and social isolation among seniors can be developed in the presence of a lower level of self-efficacy. Therefore, since seniors with LV tend to be more depressed and, given that there is a relation between self-efficacy and depression among normally sighted older adults, there may also be an association between low levels of self-efficacy and depression.

The objective of this study was to predict whether LV seniors tend to be more depressed, based on a lower level of self-efficacy. It was expected that seniors with LV who scored lower on the General Self-Efficacy Scale (GSEC) would have higher scores on the Center for Epidemiologic Studies – Depression Scale (CES-D). Specifically, it was hypothesized that the overall score on the GSEC would remain a statistically significant predictor of the overall score on the CES-D, after accounting for the effects of age and visual acuity.

2. Method

2.1 Participants

The study sample included 64 participants, aged between 62 and 96 years. They were recruited in the ophthalmology departments of two university-affiliated urban hospitals in Montreal, Canada. They had a diagnosis of AMD, diabetic retinopathy, cataract and/or glaucoma, with best-corrected visual acuity of 20/70 or worse in their better eye.

2.2 Apparatus and Measures

Acuity was measured with the Early Treatment of Diabetic Retinopathy Study (ETDRS) acuity chart (Ferris, Kassoff, Bresnick & Bailey, 1982), at a distance of 2 meters. A summary data sheet was utilized in order to keep a record of items such as testing date, name of the doctor, visual acuity, date of birth, etc. Additionally, the CES-D (Radloff, 1977) and GSE (Schwarzer & Jerusalem, 1995) scales were used.

The CES-D scale assesses depressive symptoms in older adults (Phillips, Shadish, Murray, Kubik, Lytle & Birnbaum, 2006). This questionnaire consists of 10 different statements assessing how someone may have felt during the past week. Some examples of statements on the CES-D scale are: “I felt depressed”, “I felt hopeful about the future”, “I felt fearful” and “I was happy”. Each item is scored on a scale from zero to three: (0) “rarely or none of the time” to (3) “most or all of the time” (Radloff, 1977). Phillips and colleagues (2006) reported that this broadly utilized scale is a reliable and valid source for evaluating depressive symptoms. In addition to this, the Cronbach alpha level of the CES-D scale ranges from .78 to .79 (Boey, 1999).

The GSE scale measures how confident someone may feel about his/her abilities to handle numerous demanding problems throughout life (Yuehua & Shanggui, 2004). This questionnaire has 10 different statements such as, “I can always manage to solve difficult problems if I try hard enough”, “I can find the means and ways to get what I want” and “It is easy for me to stick to my aims and accomplish my goals”. For each item, there are four possible answers ranging from (1) “not at all true” to (4) “exactly true” (Schwarzer & Jerusalem, 1995). The GSE scale demonstrated Cronbach alpha levels of higher than .80 when utilized in three different countries (Luszczynska, Scholz & Schwarzer, 2005).
2.3 Procedure

Potential participants were identified by an ophthalmologist who introduced them to the possibility of their involvement in the research study. A research assistant explained the purpose and the procedure of the study and if an individual was interested, written informed consent was obtained, either in French or in English. Given that these seniors had LV, the consent form, the “interview of the participant” sheet and the two questionnaires were read out loud. The CES-D and GSE scales were administered verbally either in French or in English and in random order. For acuity testing, participants were asked to read each line on the chart until the letters could no longer be identified. The score was expressed on a logMAR scale.

3. Results

A total of 64 participants were included in the analysis. Pearson’s correlation coefficients were calculated. There were no statistically significant correlations among variables across all 64 participants (Table 1). Hierarchical regression was used to predict depression. Each variable was entered stepwise; specifically, in step 1 there was the predictor variable age. In step 2, the visual acuity score was added, and in step 3, the total self-efficacy score was added. According to this analysis, the overall score on the GSE scale was not a significant predictor of the overall score of the CES-D scale, after accounting for the effects of age and visual acuity (Table 2).

3.1 Tables

Table 1
Correlation coefficients for all variables across all participants (n = 64)

<table>
<thead>
<tr>
<th>Total Depression Score</th>
<th>Age</th>
<th>Acuity</th>
<th>Total Self-Efficacy Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.17</td>
<td>.14</td>
<td>-.23</td>
</tr>
<tr>
<td>Acuity</td>
<td>.30</td>
<td>-.35</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Pearson’s correlation coefficients (r) were used for all variables.

Table 2
Hierarchical Regression Results.

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.01</td>
<td>.17</td>
<td>.19</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.01</td>
<td>.13</td>
<td>.31</td>
</tr>
<tr>
<td>Acuity</td>
<td>.16</td>
<td>.10</td>
<td>.44</td>
</tr>
<tr>
<td>Step 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.00</td>
<td>.07</td>
<td>.62</td>
</tr>
<tr>
<td>Acuity</td>
<td>.15</td>
<td>.10</td>
<td>.46</td>
</tr>
<tr>
<td>Total SE</td>
<td>-.20</td>
<td>-.19</td>
<td>.16</td>
</tr>
</tbody>
</table>

Note: Step 1: age, R² = .03, p < .19, Step 2: acuity, R² = .01, p < .53, ΔR² = .44, Step 3: total SE score, R² = .03, p < .27, ΔR² = .16

4. Discussion

The present study did not produce any statistically significant results. One of the reasons that the hypothesis was not supported might be because the sample size of 64 participants was too small to detect an effect. However, given the low p-values, and since data are still being collected, with more participants, the results may alternatively turn out to be statistically significant.

For the purpose of the present study, the GSE scale was a highly reliable instrument to assess the level of self-efficacy among LV seniors because its Cronbach’s alpha for the present data set was .85. The CES-D scale was not optimal to measure depression in a geriatric population because the Cronbach’s alpha was .69. Results from previous studies indicated that the CES-D has a high reliability to assess depressive symptoms with a Cronbach’s alpha of .79. However, these previous studies used populations of adolescents and pregnant women to test the reliability of the CES-D scale. Therefore, this current study would need to be replicated with a scale that would be more appropriate to assess depression in a senior population. The Geriatric Depression Scale (GDS) is a questionnaire consisting of 30 items. The purpose of this scale is for the individual to rate him/herself in order to examine psychological symptoms such as low mood, hopelessness and suicidal thoughts. In addition, this instrument is valuable to determine the interrelationships of vision, depression and functional
disability in a senior population (Rovner & Shmuel-Dulitzki, 1997), and exists in a shortened 15-item version with a Cronbach’s alpha of .90 (Malakouti, Fatollahi, Mirabzadeh, Salavati & Zandi, 2006).

According to this current study, LV seniors are not necessarily more depressed based on their low level of self-efficacy. However, since previous studies have clearly demonstrated that there is a link between visual impairment and depression, it is important to keep exploring what other variables may be contributing to depression among LV seniors. For example, Horowitz and colleagues (2006) showed that seniors using optical devices experienced significant declines in functional disability and depressive symptoms. For the majority of seniors, losing the ability to read is considered to be an important distressing outcome of vision loss. Therefore, the use of optical devices contributes to the continuation of enjoyable activities such as reading newspapers, magazines and books (Horowitz, Berman, Reinhardt & MacMillan, 2006). Additionally, Rovner (2001) explored the association between the personality trait of neuroticism and the experience of depression among individuals with AMD and found a strong relation. People high in the neuroticism personality trait are typically individuals who are affected by negative emotions, such as worry and insecurity. They are described as having disagreeable relationships with family and friends, as experiencing more negative moods, and as having pessimistic views of themselves and life changes (Cloninger, 2004). Therefore, people scoring high on the neuroticism scale are more likely to manifest depressive symptoms as a consequence of vision loss (Rovner, 2001). Furthermore, Travis and colleagues (2003) examined the relation between depression and support of family and friends. Findings from this study suggested that better ways of coping and adapting to vision loss emerged from constant help and support from family members. Moreover, positive support from friends was related to fewer depressive moods, less life dissatisfaction and better ways to cope with a decrease in vision. Since more than a third of LV seniors experience clinically significant depressive symptoms, the presence, support and contact of family members and friends are primordial in the ongoing process of adjustment to low vision (Travis et al., 2003).

Since the number of seniors affected by AMD is very large and is still increasing and, given that the prevalence of depression is very high, understanding how different variables may have an impact on depression in this population and exploring ways to prevent it is very important (Rovner & Casten, 2001). Based on the findings of this study, seniors with LV are not necessarily more depressed because their level of self-efficacy is lower. However, considering the small sample size and the relatively low reliability of the CES-D scale, this current study should be replicated with a larger sample size and with the use of the Geriatric Depression Scale. Finally, since depression among seniors is considered the most omnipresent and persistent mental health problem and is strongly associated to functional disability in the lives of older partially sighted adults (Horowitz, 2004), it is important to continue examining how variables such as self-efficacy may have an impact on the experience of depression. In addition, awareness of the emotional and psychological aspects of vision impairment is essential. Health professionals may be able to pay additional attention to individuals who show the psychological profile of requiring additional services due to predisposing factors such as low self-efficacy.

References


