

**OLDER ADULTS WITH VISION LOSS:
A CONSIDERATION OF COPING STRATEGIES,
APPRAISALS, AND COPING RESOURCES**

By

Carmen C. Grabusic

**A Thesis Submitted to the Faculty
of Graduate Studies in Partial Fulfillment of the
Requirements for the degree of**

MASTER OF ARTS

**Department of Sociology
University of Manitoba
Winnipeg, Manitoba**

© July, 1997

TABLE 6: Life Satisfaction, Self-esteem, Self-efficacy, Perceived Control Over Health, and Health Locus of Control of Eye Problem (EP) and No Eye Problem (NEP) Groups

	% of EPs (n = 126) ¹	% of NEPs (n = 265) ¹	% of Total (N = 391) ¹
Life Satisfaction	(n = 123)	(n = 260)	(n = 383)
Poor (0 - 13)	35.0	16.5	22.5
Fair (14 - 19)	30.1	38.5	35.8
Good (20 - 22)	19.5	25.8	23.8
Excellent (23 - 26)	15.4	19.2	18.0
Mean (S.D.)	16.2 (5.9)	18.0 (5.1)	17.4 (5.4)
$\chi^2 = 16.30$, d.f. = 3, $p < .001$; Cramer's V = .21			
t-ratio = 2.99, d.f. = 212.46, $p < .005$			
Self-esteem	(n = 123)	(n = 257)	(n = 380)
Poor (0 - 17)	15.4	7.4	10.0
Fair (18 - 19)	32.5	20.6	24.5
Good (20)	30.9	43.6	39.5
Excellent (21 - 30)	21.1	28.4	26.1
Mean (S.D.)	19.4 (2.4)	20.4 (2.7)	20.1 (2.6)
$\chi^2 = 15.29$, d.f. = 3, $p < .01$; Cramer's V = .20			
t-ratio = 3.34, d.f. = 378, $p < .005$			
Self-efficacy	(n = 123)	(n = 256)	(n = 379)
Poor (0 - 28)	30.1	25.0	26.6
Fair (29 - 31)	33.3	23.4	26.6
Good (32 - 33)	22.8	24.2	23.7
Excellent (34 - 51)	13.8	27.3	25.0
Mean (S.D.)	29.9 (4.2)	31.0 (4.2)	30.6 (4.2)
$\chi^2 = 10.55$, d.f. = 3, $p < .05$; Cramer's V = .17			
t-ratio = 2.50, d.f. = 377, $p < .005$			

¹ If n for the sample does not total 391 (126 for those with eye problems or 265 for those without eye problems), the remainder did not answer the question (i.e. missing values).

Table 6 continued

	% of EPs (n = 126) ¹	% of NEPs (n = 265) ¹	% of Total (N = 391) ¹
Perceived Control Over health	(n = 125)	(n = 259)	(n = 384)
None	13.6	8.9	10.4
Some	64.0	51.7	55.7
A Great Deal	22.4	39.4	33.9
$\chi^2 = 11.26$, d.f. = 2, $p < .005$; Cramer's V = .17			
External Health Locus of Control	(n = 122)	(n = 253)	(n = 375)
Low (0 - 4)	35.2	50.2	45.3
High (5 - 9)	64.8	49.8	54.7
Mean (S.D.)	4.8 (1.4)	4.5 (1.5)	4.6 (1.5)
$\chi^2 = 7.42$, d.f. = 1, ns; Phi = .14			
t-ratio = -1.89, d.f. = 373, ns			
Internal Health Locus of Control	(n = 116)	(n = 250)	(n = 366)
Low (0 - 5)	46.6	38.9	41.3
High (6 - 12)	53.4	61.2	58.7
Mean (S.D.)	5.8 (1.3)	6.1 (1.3)	6.0 (1.3)
$\chi^2 = 1.96$, d.f. = 1, ns; Phi = .07			
t-ratio = 1.91, d.f. = 364, ns			
Medical Skepticism	(n = 117)	(n = 250)	(n = 367)
Low (0 - 7)	46.2	48.0	47.4
High (8 - 15)	53.8	52.0	52.6
Mean (S.D.)	7.8 (2.1)	7.7 (2.1)	7.8 (2.1)
$\chi^2 = .11$, d.f. = 1, ns; Phi = .02			
t-ratio = -.31, d.f. = 365, ns			

¹ If n for the sample does not total 391 (126 for those with eye problems or 265 for those without eye problems), the remainder did not answer the question (i.e. missing values).

The psychological measure of **self-esteem** also varies across the two sub-groups (Table 6). On average, EPs ($\bar{x} = 19.4$) have lower self-esteem scores than NEPs ($\bar{x} = 20.4$). Cross-tabulation⁷ and t-test results confirm that this difference is statistically significant. However, the relationship is a weak one (Cramer's $V = .20$) (Table 6).

Turning to **self-efficacy**, EPs ($\bar{x} = 29.9$) score lower on average than NEPs ($\bar{x} = 31.0$) (Table 6). Results of the cross-tabulation⁸ and the t-test indicate that self-efficacy scores vary significantly between the two groups. However, the relationship between eye problems and self-efficacy is not a strong one (Cramer's $V = .17$).

In terms of **perceived control over health**, differences appear to exist among the two sub-groups (Table 6). EPs are less likely to perceive a "great deal" of control over their own health (22.4%) as compared to NEPs (39.4%). Cross-tabulation⁹ results suggest a weak relationship between eye problems and perceived control over health (Cramer's $V = .17$).

Turning to **external health locus of control**, on average, EPs ($\bar{x} = 4.8$) and NEPs ($\bar{x} = 4.5$) score similarly (Table 6). Cross-tabulation¹⁰ and t-test results confirm that the difference is not statistically significant (Table 6). In other words, the degree to which individuals believe that their health is determined by chance or by fate does not differ between the two groups.

⁷ Collapsed categories include 0 - 17, 18 - 19, 20, and 21 - 30.

⁸ Collapsed categories include 0 - 28, 29 - 31, 32 - 33, and 34 - 51.

⁹ Categories include None, Some, and A Great Deal.

¹⁰ Collapsed categories include 0 - 4, and 5 - 9.

Turning to **internal health locus of control**, EPs ($\bar{x} = 5.8$) score slightly lower than NEPs ($\bar{x} = 6.1$) (Table 6). Cross-tabulation¹¹ and t-test results disclose no significant difference between the two groups (Table 6). This finding suggests that the degree to which individuals believe that their health is determined by their own actions does not vary between those with and without eye problems.

The final sub-scale within the health locus of control items is **medical skepticism**. EPs ($\bar{x} = 7.8$) and NEPs ($\bar{x} = 7.7$) score similarly on this measure (Table 6). Cross-tabulation¹² and t-test results confirm that there is no significant difference between the two groups. In summary, the degree to which one is skeptical of modern medicine, or of health care professionals does not appear to be associated with eye problems.

Social Resources

The social resources available to respondents are described by seven indicators. These indicators are: marital status, living arrangements, the size of family network, the number of family network members seen at least weekly, the number of confidants, the number of friends, and perceived instrumental support.

Looking first at **marital status**, close to equal proportions of EPs are married (42.9%) and widowed (42.1%). In comparison, 55.8% of the NEP group are married, while 33.6% are widowed (Table 7). Cross-tabulation¹³ results suggest that the EP

¹¹ Collapsed categories in the cross-tabulation include 0 - 5, and 6 - 12.

¹² Collapsed categories include 0 - 7, and 8 - 15.

¹³ Collapsed categories include Not currently Married (0), and Married (1).

group is less likely to be married than the NEP group. Although the relationship is statistically significant, it is a weak one ($\Phi = -.12$) (Table 7).

TABLE 7: Marital Status, Living Arrangements, Size of Family Network, Number of Family Network Members Seen at Least Weekly, Number of Confidants, Number of Friends, and Perceived Instrumental Support of Eye Problem (EP) and No Eye Problem (NEP) Groups

	% of EPs (n = 126) ¹	% of NEPs (n = 265) ¹	% of Total (N = 391) ¹
Marital Status			
Single/Never Married	11.9	6.4	8.2
Married	42.9	55.8	51.7
Divorced/Separated	3.2	4.2	3.8
Widowed	42.1	33.6	36.3
$\chi^2 = 5.77$, d.f. = 1, $p < .05$; $\Phi = -.12$			
Living Arrangements			
Lives Alone	49.2	39.2	42.5
Lives with One or More Others	50.8	60.8	57.5
$\chi^2 = 3.47$, d.f. = 1, ns; $\Phi = -.09$			
Size of Family Network (Number of Family Members)			
		(n = 263)	(n = 381)
0 - 4	61.1	57.4	58.3
5 -	38.9	42.6	41.2
Mean (S.D.)	4.1 (2.9)	4.6 (2.8)	4.4 (2.9)
$\chi^2 = 0.48$, d.f. = 1, ns; $\Phi = -.04$			
t-ratio = 1.56, d.f. = 387, ns			
Number of Family Network Members Seen at Least Weekly			
0	19.0	18.1	18.4
1 - 2	49.2	47.9	48.3
3+	31.7	34.0	33.2
Mean (S.D.)	2.1 (1.7)	2.1 (1.7)	2.1 (1.7)
$\chi^2 = .15$, d.f. = 1, ns; $\Phi = -.02$			
t-ratio = 1.15, d.f. = 387, ns			

¹If n for the sample does not total 391 (126 for those with eye problems or 265 for those without eye problems), the remainder did not answer the question (i.e. missing values).

Table 7 continued

	% of EPs (n = 126) ¹	% of NEPs (n = 265) ¹	% of Total (N = 391) ¹
Number of Confidants			
0	17.5	(n = 262) 21.8	(n = 388) 20.4
1	33.3	29.4	30.7
2+	49.2	48.9	49.0
Mean (S.D.)	1.8 (1.6)	2.1 (2.4)	2.0 (2.2)
$\chi^2 = 1.20$, d.f. = 2, ns; Cramer's V = .06			
t-ratio = 1.17, d.f. = 347.75, ns			
Number of Friends			
0 - 6	69.0	(n = 263) 63.9	(n = 389) 65.6
7+	31.0	36.1	34.4
Mean (S.D.)	6.8 (7.1)	8.0 (11.5)	7.6 (10.3)
$\chi^2 = 1.00$, d.f. = 1, ns; Phi = -.05			
t-ratio = 1.13, d.f. = 387, ns			
Perceived Instrumental Support			
0 - 4 Tasks help is perceived to exist	8.7	(n = 263) 7.6	(n = 389) 8.0
5 - 6 Tasks help is perceived to exist	91.3	92.4	92.0
Mean (S.D.)	5.6 (.75)	5.7 (.71)	5.6 (.73)
$\chi^2 = .15$, d.f. = 1, ns; Phi = -.02			
t-ratio = 1.15, d.f. = 387, ns			

¹If n for the sample does not total 391 (126 for those with eye problems or 265 for those without eye problems), the remainder did not answer the question (i.e. missing values).

The next indicator of social resources is **living arrangements**. Close to one-half (49.2%) of EPs, and 39.2% of NEPs live alone (Table 7). Results of a cross-tabulation¹⁴ suggest that eye problems are not associated with living arrangements (Table 7).

Turning to the **size of family network**, the EPs report a mean of 4.1 family members as compared to a mean of 4.6 family members reported by the NEP group

¹⁴ Collapsed categories include Lives Alone (0), and Lives with One or More Others (1).

(Table 7). Both cross-tabulation¹⁵ and t-test results confirm that the difference is not statistically significant. Therefore, there does not appear to be a relationship between eye problems and the size of family network (Table 7).

On average, both EPs and NEPs report a mean of 2.1 **family network members seen at least weekly** (Table 7). Neither the cross-tabulation¹⁶ nor the t-test results are statistically significant (Table 7). Therefore, there is no relationship between the presence of eye problems and the number of family network members seen at least weekly.

In terms of **number of confidants**, 82.5% of EPs and 78.3% of NEPs report having at least one confidant (Table 7). Cross tabulation¹⁷ and t-test findings suggest that there is no significant difference between EPs and NEPs in terms of the number of confidants that they identify (Table 7).

Turning to **number of friends**, the EP group report a mean of 6.8 friends, compared to 8.0 for the NEP group (Table 7). Cross tabulation¹⁸ and t-test results both reveal no significant difference between the two groups in terms of the number of friends identified (Table 7).

¹⁵ Collapsed categories include 0 to 4 (0), and 5+ Family Members (1). The categories were developed after considering the mean number of family members for the entire sample, as well as a distribution that would divide the entire sample into roughly two equal groups.

¹⁶ Collapsed categories include 0 (0), 1 to 2 (1), and 3 or More Family Members (2). The categories are the result of dividing the entire sample into three groups, taking into account the mean, and a normal distribution curve.

¹⁷ Collapsed categories include None (0), One (1), and Two or More Confidants (2). These categories are the result of dividing the entire sample into three groups, taking into account the mean, and a normal distribution curve.

¹⁸ Collapsed categories include 0 - 6 (0), and 7+ Friends (1). These categories are the result of dividing the entire sample into two groups, taking into account the mean.

The final measure of social support is **perceived instrumental support** (Table 7). Nearly all (91.3%) of EPs are able to identify at least one person whom they could call upon for help with at least five of the six activities which are asked about. In comparison, 92.4% of NEPs report similar levels of perceived instrumental support. Cross-tabulation¹⁹ and t-test results reveal no significant difference between the two groups in terms of their perceived instrumental support (Table 7).

Material Resources

The three material resources to be considered are monthly household income, perceived adequacy of household income, and education. Average **monthly household income** varies across the sample (Table 8).²⁰ Among the EPs, over one-third (41.3%) report household incomes less than \$1499, as compared to 28.3% of NEPs. Furthermore over one-tenth (13.5%) of EPs acknowledge incomes of over \$2500, while 24.5% of the NEP group are in this category. Close to equal proportions of both groups do not know the monthly income of the household (EP = 15.1%, NEP = 11.3%), or choose not to respond to this question (EP = 6.3%, NEP = 8.3%).

¹⁹ Collapsed categories include 0 to 4 (0), and 5 to 6 (1). These numbers reflect the number of activities for which one has perceived instrumental support. The categories are the result of dividing the entire sample into two groups at the only point where there is some variation.

²⁰ Table 8 reports two income sample distributions. One includes the entire sample, while the other excludes those individuals who did not respond to the question.

TABLE 8: Monthly Household Income, Perceived Adequacy of Household Income, and Education of Eye Problem (EP) and No Eye Problem (NEP) Groups

	% of EPs (n = 126) ¹	% of NEPs (n = 265) ¹	% of Total (N = 391) ¹
Monthly Household Income (\$)			
(Entire Sample)			
\$0 - \$1499	41.3	28.3	32.5
\$1500 - \$2499	23.8	27.5	26.3
\$2500+	13.5	24.5	21.0
Do Not Know	15.1	11.3	12.5
Missing Value	6.3	8.3	7.7
Monthly Household Income (\$)			
(Excluding Missing Values)			
	(n = 99)	(n = 213)	(n = 312)
\$0 - \$1499	52.5	35.2	40.7
\$1500 - \$2499	30.3	34.3	33.0
\$2500+	17.2	30.5	26.3
Mean (Range)	\$1500 - \$1749	\$2000 - \$2249	\$1750 - \$1999
$\chi^2 = 9.88$, d.f. = 2, p<.01; Spearman = -.18			
t-ratio = 2.87, d.f. = 310, p<.005			
Perceived Adequacy of Household Income			
		(n = 262)	(n = 388)
Very Well	25.4	27.1	26.5
Adequately	55.6	59.2	58.0
With Some Difficulty/Not Very Well	19.0	13.7	15.5
$\chi^2 = 1.83$, d.f. = 2, ns; Cramer's V = .07			
Education (Years)			
	(n = 125)	(n = 264)	(n = 389)
0 - 8	28.0	26.5	27.0
9 - 12	56.8	53.0	54.2
13+	15.2	20.5	18.8
Mean (S.D.)	10.6 (3.2)	10.2 (3.5)	10.6 (3.4)
$\chi^2 = 1.54$, d.f. = 2, ns; Cramer's V = .06			
t-ratio = 1.87, d.f. = 387, ns			

¹If n for the sample does not total 391 (126 for those with eye problems or 265 for those without eye problems), the remainder did not answer the question (i.e. missing values).

A t-test is conducted to determine whether there is a significant difference in the mean household incomes between the two groups. Excluded are the individuals who chose not to answer this question, or do not know their monthly household income. The mean income of EPs is between \$1500 to \$1749, while NEPs have a mean household income within the range of \$2000 to \$2249. Cross-tabulation²¹ and t-test results suggest that EPs have lower monthly household incomes than NEPs. Notwithstanding the statistical significance, the relationship is a weak one (Spearman = -.18).

Attention now turns to the **perceived adequacy of household income** (Table 8). The majority of both groups (EP = 81.0%, NEP = 86.3%) feel that their income satisfies their needs either “very well” or “adequately”. Cross-tabulation²² results reveal that there is no association between eye problems in later life and perceived adequacy of household income (Table 8).

The final material resource to be considered is **education**. Close to three-quarters (72.0%) of EPs have 9 or more years of education, as compared to 73.5% of NEPs (Table 8). Both cross-tabulation²³ and t-test results advise that there is not a significant difference across the two groups in terms of the number of years of schooling (Table 8).

²¹ The collapsed version of the monthly household income variable does not include those individuals who did not know their monthly household income, or who refused to respond.

²² Collapsed categories include Very Well, Adequately, and With Some Difficulty/Not Very Well.

²³ Categories include 0 to 8 years, 9 to 12 years, 13+ years.

Summary of the Bivariate Analyses

Although a variety of socio-demographic and coping resources are considered across the two groups, only some of the factors contribute to explaining differences across the two groups (Table 9). Of the socio-demographic characteristics that are included, the groups differ in terms of both age and gender. EPs are significantly older and more likely to be female than NEPs.

TABLE 9: Differences Between Eye Problem (EP) and No Eye Problem (NEP) Groups

Variables	Significant Differences Between EP and NEP Groups At the Bivariate Level
Socio-demographic Characteristics	
Age	EP group older
Gender	EP group more likely to be female ¹
Health Status	
Self-assessed Health Status	EP group poorer self-assessed health ¹
Chronic Health Problems	EP group more health problems
Number of ADL/IADL limitations	EP group requires help with more ADL/IADLs ¹
Psychological Resources	
Life Satisfaction	EP group scores lower ¹
Self-esteem	EP group scores lower ¹
Self-efficacy	EP group scores lower ¹
Perceived Control Over Health	EP group expresses less perceived control ¹
Health Locus of Control	
External Health Locus of Control	---
Internal Health Locus of Control	---
Medical Skepticism	---
Social Resources	
Marital Status	EP group less likely to be married ¹
Living Arrangements	---
Size of Family Network	---
Number of Family Network Members Seen at Least Weekly	---
Number of Confidants	---
Number of Friends	---
Perceived Instrumental Support	---
Material Resources	
Monthly Household Income	EP group lower household income ¹
Perceived Adequacy of Household Income	---
Education	---

¹Statistically significant but weak association ($<.30$)

--- Indicates no statistically significant differences at the bivariate level.

All three of the health status variables (self-assessed health, chronic health problems, and ADL/IADL limitations) are found to differ across the two groups. Compared to NEPs, EPs tend to self-assess their health as poorer, have more chronic health problems, and have more ADL/IADL limitations.

Four of the psychological resources are found to vary between the two samples. On average, the EP group score lower in terms of life satisfaction, self-esteem, and self-efficacy, and perceive that they have less control over their own health when compared to NEPs. The two groups do not differ in terms of external and internal health locus of control and medical skepticism.

Only one out of the seven social resources reveal a difference across the two groups. EPs are less likely to be married than NEPs, while there are not significant differences in terms of living arrangements, the size of family network, the number of family network members seen at least weekly, the number of confidants, the number of friends, and perceived instrumental support.

Lastly, in terms of material resources, the two groups appear to vary in terms of monthly household income. EPs have slightly lower household incomes than NEPs. There is no difference between the two groups in terms of the perceived adequacy of household income or education.

Multivariate Analyses

The variables found to be significant at the bivariate level (age, gender, self-assessed health status, chronic health problems, ADL/IADL limitations, life

satisfaction, self-esteem, self-efficacy, perceived control over health, marital status, and monthly household income) are retained for discriminant function analyses (DFA).²⁴ This multivariate analysis method is chosen as it takes those variables (socio-demographic characteristics and certain coping resources) which are significant at the bivariate level and determines whether as a group they are able to differentiate between EPs and NEPs. In addition, this statistical technique classifies the cases, in order to determine what proportion are correctly classified when only the information on these variables is known.²⁵

Prior to conducting DFA, a Pearson Product Moment Correlation Matrix test for multicollinearity is used to establish correlations between the independent variables. Correlation coefficients near or above 0.60 are considered strong (Hickey, 1986) and result in variables being entered into separate discriminant function analyses. The bivariate correlations between the eleven independent variables are presented in Table 10. It is determined that none of the variables are multicollinear.

²⁴ For the purposes of these analyses, the variables of age, chronic health problems, ADL/IADL limitations, life satisfaction, self-esteem, self-efficacy, and monthly household income are continuous. Next, the variable of perceived control over health is interval level. Finally, the variables of gender, self-assessed health status, and marital status are dichotomized.

²⁵ For a more detailed discussion on this multivariate method, and its statistics, please see Chapter Three.

**TABLE 10: Pearson Product Moment Correlation Matrix,
Independent Variables for Discriminant Function Analyses**

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Age	1.00										
(2) Gender	.12	1.00									
(3) Self-assessed Health Status	-.12	.04	1.00								
(4) Chronic Health Problems	.09	.10	-.40	1.00							
(5) ADL/IADL Limitations	.34	.15	-.30	.32	1.00						
(6) Life Satisfaction	-.09	.03	.32	-.27	-.20	1.00					
(7) Self-esteem	-.08	-.05	.19	-.14	-.17	.18	1.00				
(8) Self-efficacy	-.14	-.12	.21	-.24	-.18	.27	.43	1.00			
(9) Perceived Control Over Health	.16	-.06	-.31	-.20	-.21	.33	.22	.21	1.00		
(10) Marital Status	-.26	-.40	-.08	-.07	-.11	.10	.05	.13	.06	1.00	
(11) Monthly Household Income	-.23	-.34	.11	-.14	-.13	.17	.10	.09	.16	.42	1.00

Some researchers (Norusis, 1994) suggest that if too many cases are missing on a particular variable, it may be wise to eliminate the variable from the analysis. Several missing cases on a variable creates two problems. First, results based on smaller sample sizes can be more variable. Second, those who do not have missing data may differ from those who do have missing data, leading to biased results (Norusis, 1994).

In terms of this analysis, the variable of monthly household income has a significant number of missing cases. Forty-nine respondents do not know their average monthly household income, while thirty individuals refused to answer the question. Therefore, additional discriminant function analyses are conducted. A discriminant function analysis is performed without the monthly household income variable (Equation 2). This version is compared to Equation 1 in order to establish

whether the smaller sample size (a result of the monthly household income variable being included) produces different results.

In addition to exploring any differences that exist because of sample size, it is also necessary to consider any differences between respondents who do and who do not have missing data on the monthly household income variable. Consequently, Equation 3 takes into account respondents who provide monthly household income information, while Equation 4 considers respondents who did not provide this information. The monthly household income variable is excluded in both of these analyses.

Results of Discriminant Function Analyses: Equation 1

The first DFA includes the eleven variables that were found to differentiate EPs and NEPs at the bivariate level (Equation 1).²⁶ Results are based on a sample size of 298, as the remainder (n = 93) did not have information for all eleven variables. Results reveal that these factors are able to significantly differentiate between EPs and NEPs (Table 11 - Column 2). However, it should be noted that only 13.7% of the variability in the discriminant scores is attributable to between group differences. Upon considering the standardized Canonical discriminant function coefficients, it is evident that the variables of age and ADL/IADL limitations contribute the most to this function, while the third ranked variable of chronic health problems contributes close to one-half less than its predecessors. Positive standardized Canonical discriminant function coefficients indicate that higher scores

²⁶ For these analyses, all of the independent variables are entered in concurrently.

for the variables are associated with the event in question occurring. In this case, advancing age, more ADL/IADL limitations, and more chronic health problems are associated with having eye problems. Finally, as a part of the DFA, the classification procedure indicates that 69.1% of the cases could be correctly classified when only their values on the eleven discriminating variables are known. This is 19.1% better than expected by chance alone.

TABLE 11: Discriminant Function Analyses Results

	Equation 1	Equation 2	Equation 3	Equation 4
	Entire Sample (n = 298)	Entire Sample (n = 373)	Respondents that Provide Income Information (n = 298)	Respondents that Do Not Provide Income Information (n = 76)
Standardized Canonical Discriminant Function Coefficients¹				
VARIABLES				
Age	+ .44	+ .41	+ .46	+ .25
Gender	+ .21	+ .20	+ .26	- .13
Self-assessed Health Status	+ .17	+ .18	+ .15	+ .24
Chronic Health Problems	+ .22	+ .38	+ .23	+ .73
ADL/IADL Limitations	+ .43	+ .41	+ .43	+ .38
Life Satisfaction	- .17	- .13	- .20	+ .18
Self-esteem	- .13	- .26	- .14	- .46
Self-efficacy	- .07	+ .08	- .06	Not Included
Perceived Control Over Health	- .11	- .17	- .12	Not Included
Marital Status	+ .04	- .05	- .02	Not Included
Monthly Household Income	- .20	Not Included	Not Included	Not Included
FUNCTION STATISTICS				
Canonical Correlation	.37	.38	.37	.50
(Canonical Correlation) ²	13.7	14.4	13.7	25.0
Wilks' Lambda	.86, p<.001	.86, p<.001	.87, p<.001	.75, p<.01
χ^2 , d.f.	43.33, 11	57.02, 10	42.17, 10	19.82, 7
Significance Level	p<.001	p<.001	p<.001	p<.01
Eigenvalue	.16	.17	.16	.32
Percentage of Cases Correctly Classified	69.1	70.5	68.8	72.4

¹ A positive sign (+) indicates that higher scores for the variable are associated with having eye problems; a negative sign (-) indicates that higher scores for the variable are associated with not having eye problems.

Results of Discriminant Function Analyses: Equation 2

In general, the results of Equation 2 (Table 11 - Column 3) are consistent with the results of Equation 1. The results are based on 373 cases, as the remaining eighteen did not have complete information for the ten variables. To begin, the factors do significantly differentiate between the two groups, while 14.4% of the variability in the discriminant scores is a result of between group differences. Similar to Equation 1, age, chronic health problems, and ADL/IADL limitations contribute the most to the function. Classification results reveal that 70.5% of the time, respondents are placed in the correct group (EP, NEP) when only their values on these ten discriminating variables are known. After considering the findings of both equations (Equations 1 & 2), it does not appear that the smaller sample size (a result of the monthly household income variable being included) alters results substantially.

An additional analysis (not reported in Table 11) conducted with only the three variables of age, chronic health problems, and ADL/IADL limitations is also statistically significant. These findings suggest that these three variables alone serve to distinguish between EPs and NEPs. However, in comparison to those analyses where more variables are included, less of the variance in the discriminant scores is attributed to between group differences (10.2%). Finally, when only the variables of age, chronic health problems, and ADL/IADL limitations are included, 67.5 percentage of cases are correctly classified into the groups of EPs and NEPs.

Results of Discriminant Function Analyses: Equation 3

In addition to exploring any differences that exist because of sample size, it is also necessary to consider any differences between respondents who do and who do not have missing data on the monthly household income variable. Consequently, Equation 3 takes into account respondents who provide monthly household income information, while Equation 4 considers respondents who did not provide this information. The monthly household income variable is excluded in both of these analyses. It is important to note that within these two groups of individuals (provide monthly household income versus do not provide monthly household income), the proportion of EPs and NEPs is consistent with those found within the entire sample.²⁷

The results for Equation 3 are based on 298 out of a possible 312 cases, as some respondents did not have complete information for the ten variables. The findings are consistent with the two previously reported on analyses, as the ten factors successfully differentiate between the two groups. However, only 13.7% of the variability in the discriminant scores is a result of between group differences (Table 11 - Column 4). Similar to the previous two equations, age, chronic health problems, and ADL/IADL limitations contribute the most to the function. Classification results reveal that 68.8% of the time, study participants are placed in the correct group (EP, NEP) when only their values on these ten discriminating variables are known.

²⁷ Among those who provided monthly household income ($n = 312$), 31.7% are EPs, while 68.3% are NEPs. Among those who did not provide monthly household income ($n = 79$), 34.2% are EPs, while 65.8% are NEPs.

Results of Discriminant Function Analyses: Equation 4

The final discriminant function analysis (Equation 4) includes respondents who have missing data on the monthly household income variable. In order to fulfill the ratio of one variable for every ten cases, only seven variables were included. Self-efficacy, perceived control over health, and marital status were dropped from this analysis, as they were found to be least influential in the previous analyses (Equations 1 - 3). The Results are based on 76 of the 79 cases, as three individuals did not have complete information for the seven variables. Like the previous three analyses, results of Equation 4 confirm that the seven discriminator variables differentiate between the two groups (Table 11 - Column 5). The corresponding Canonical correlation suggests that 25.0% of the variability in the discriminant scores is attributable to between group differences. However, due to a small sample size these results should be viewed cautiously. A consideration of the standardized Canonical discriminant function coefficients reveals that chronic health problems, and self-esteem contribute most to the function, with the former contributing more than the latter. Finally, classification results reveal that 72.4% of the time, respondents are placed in the correct group (EP, NEP) when only their values on the discriminating variables are known.

If we compare respondents who do and who do not have missing data on the monthly household income variable, it appears that different variables contribute the most to differentiating between EPs and NEPs in each of the samples. In the case of respondents who provide income information (Equation 3), age, ADL/IADL

limitations, and chronic health problems contribute the most to the function. In comparison, for respondents who do not provide income information (Equation 4), chronic health problems, self-esteem, and ADL/IADL limitations are the three factors that contribute the most to the function. Due to the limited sample size of the latter group, it is difficult to say whether the differences that appear here are legitimate, or if they are simply a reflection of the relatively small sample size.

Summary of the Multivariate Analyses

The results of the multivariate analyses confirm those findings reported at the bivariate level. All four of the discriminant function analyses reveal that the variables which are found to differ statistically across the two groups at the bivariate level, also serve to distinguish between the two groups when considered in combination at the multivariate level. Notwithstanding the statistical significance, the effectiveness of the discriminant variables as a group is weak. Age, chronic health problems, and ADL/IADL limitations appear to contribute the most to between group differences.

When individuals who do not have missing data on the monthly household income variable are compared to respondents who do, there appears to be a slight variation in terms of the variables which contribute the most (relative to the other variables) to distinguishing among the two groups. However, the extent of this difference is difficult to establish, due to the relatively small sample size of respondents who have missing data on the monthly household income question.

Finally, classification results across all of the DFAs are relatively consistent. The findings suggest that on average seven out of ten respondents are assigned to the correct group, when the values to the discriminator variables is all that is known.

Chapter Conclusion

The main objective of this chapter was to report on the findings of Research Question # 1. The chapter began with comparisons between EP and NEP groups in terms of both socio-demographic characteristics and coping resources. With the use of various bivariate statistics, it was found that the two groups differ in terms of a number of indicators. First, the EP group is more likely to be older, and female, than the NEP group. Secondly, EPs self-assess their health as poorer, have more chronic health problems and more ADL/IADL limitations than the NEP group. Next, EPs express less perceived control over their health, and score lower in terms of life satisfaction, self-esteem, and self-efficacy than NEPs. Finally, EPs are more likely to not be currently married than NEPs, and to have lower monthly household incomes. The chapter also included the results of four separate discriminant function analyses, which confirmed findings found at the bivariate level. Age, chronic health problems, and ADL/IADL limitations were found to contribute the most to between group differences.

CHAPTER FIVE: FINDINGS OF RESEARCH QUESTION # 2

Chapter Introduction

This chapter has two main objectives. The first objective is to describe the situation of people who are living with vision loss in later life. To begin, details on diagnoses, and length of time with eye problem(s) are presented. Secondly, the eye conditions/diseases that EPs report will be considered. Finally, the sample will be described in terms of perceived cause(s), perceived symptom(s), and the amount of interference and bother that the symptoms cause them. It should be noted that diagnoses information, and eye conditions/diseases are included for descriptive purposes only, and will not be utilized in further analyses.

The second objective of this chapter is to address Research Question # 2 “What are the coping strategies used by older adults with vision loss, and to what extent is there variation in these strategies?” This research question focuses on describing the coping strategies used by older adults with vision loss. To determine what strategies are used, the actions reported to deal with the problem are considered. The chapter begins by considering details on diagnoses.

Diagnoses

The overwhelming majority of EPs (99.2%) indicate that their eye problem(s) have been **diagnosed** by a health care professional (Table 12). Over-one half (57.9%) of those who have had the problems diagnosed state that an ophthalmologist diagnosed

them, while an equal number of respondents (16.5%) report that either a general practitioner/family doctor/emergency MD or specialist MD provided the diagnosis.¹

TABLE 12: Details on Diagnoses Reported by the Eye Problem (EP) Group

Variable	% of EPs
Diagnosed	(n = 123) ¹
No	0.8
Yes	99.2
Type of Professional Giving Diagnosis	(n = 121) ²
Ophthalmologist	57.9
GP/Family/Emergency MD	16.5
Specialist MD	16.5
Optometrist	9.1
Length of Time Since Diagnosis (Years)	(n = 119) ³
0 - 1	40.3
2 - 3	19.3
4 - 9	24.4
10+	16.0
Mean (S.D.)	5.5 (8.1)

¹ The sample does not total 126 as some respondents were interviewed over the telephone and were not asked this question (n = 3) (i.e. missing values).

² The sample does not total 126 as some respondents were interviewed over the telephone and were not asked this question (n = 3) (i.e. missing values), or did not have the eye problem(s) diagnosed (n = 1).

³ The sample does not total 126 as some respondents were interviewed over the telephone and were not asked this question (n = 3), did not answer the question (n = 2) (i.e. missing values), did not know the length of time since the diagnosis (n = 1), or did not have the eye problem(s) diagnosed (n = 1).

Respondents also report on when the diagnosis was made (Table 12). The

length of time since the diagnosis ranges from less than one to forty-two years. Over

¹ Some respondents simply state that a "specialist" diagnosed their eye problems; therefore, it is unknown as to the type of specialist.

one-third of the group (40.3%) indicate that the diagnosis was made in the last year, while 43.7% state that that the diagnosis took place two to nine years ago. Finally, 16.0% of EPs say that they were provided with a diagnosis ten or more years ago.

Length of Time With Eye Problem(s)

In addition to respondents indicating the length of time since their diagnosis, they are asked how long ago they noticed the problem (Table 13). The **length of time with eye problem(s)** ranges from less than one to eighty-one years. Over one-quarter (26.2%) of EPs have had their eye problem(s) for less than one year, while over one-half (50.8%) have had the condition for two to nine years. Finally, 23.0% of EPs have had their eye condition(s) for ten or more years.

TABLE 13: Length of Time with Eye Problems Reported by the Eye Problem (EP) Group

Variable	% of EPs
Length of Time with Eye Problems (Years)	(n = 126)
0 - 1	26.2
2 - 3	27.0
4 - 9	23.8
10+	23.0
Mean (S.D.)	8.0 (13.4)

When the length of time with eye problems is compared to the length of time since the diagnosis, EPs report similar time frames (Table 14). Over one-half (53.8%) of EPs noticed the problem and had it diagnosed in the three years prior to

the interview. Similarly, over one-third (40.3%) of the group noticed the problem and had it diagnosed four or more years prior to the interview. Few individuals (5.9%) acknowledge that they have had the problem four or more years, but have only had it diagnosed in the previous three years. Not surprising, there are no individuals who report having the problem diagnosed before they noticed it. In summary, EPs generally receive diagnoses relatively soon after noticing their eye problem(s).

TABLE 14: A Comparison of the Length of Time with Eye Problems and Length of Time Since Diagnosis Reported by the Eye Problem (EP) Group

	% of EPs ¹	
	0 - 3 Years	4+ Years
Length of Time with Eye Problems (Years)		
0 - 3 Years	53.8	5.9
4+ Years	0.0	40.3
$\chi^2 = 93.61, d.f. = 1, p < .0001; \text{Phi} = 0.89,^2 p < .001$		

¹ The sample is equal to 119 as the remainder did not answer one of the two questions (i.e. missing values), or were not required to answer (i.e. not applicable). See Table 12 for more details.

² The correlation between the original variables (Years - continuous) is not as strong as it is for the collapsed variables (Pearson's = 0.71, $p < .0001$).

Eye Conditions/Diseases

It is difficult to specify the eye conditions/diseases that EPs have, as the respondents were not asked to name their eye condition/disease. However, it is possible to estimate the frequency of certain conditions/diseases as interviewers regularly wrote information on the interview schedule. This information on eye

conditions/diseases is available for eighty-five respondents (67.4% of EPs). The majority (75.3%) of this sub-group mention that they have cataracts (Table 15). The second most frequently identified condition is glaucoma (17.6%), followed by macular degeneration (8.2%). Finally, 9.4% of EPs report having other conditions/diseases such as retinitis (n = 4), vascular problems caused by an accident (n = 2), growth on eye (n = 1), and stye (n = 1). Due to the limited sample size, it is difficult to make any sort of comparison to the Manitoba or Canadian senior population; however, the eye conditions/diseases of this sample generally reflect those found in the larger society (see National Advisory Council on Aging, 1990).

TABLE 15: Eye Conditions/Diseases Reported by the Eye Problem (EP) Group

Variable	% of EPs
Eye Condition/Disease	(n = 85) ¹
Cataracts	75.3
Glaucoma	17.6
Macular Degeneration	8.2
Other ²	9.4

¹ There is no information on eye condition/disease for the remainder of the sample.

² Examples of other conditions/diseases are retinitis (n = 4), vascular problems caused by an accident (n = 2), growth on eye (n = 1), and stye (n = 1).

³ The percentages add up to more than 100% as some respondents reported more than one eye condition/disease.

Perceived Cause(s)

To determine the perceived cause(s) of eye problem(s), EPs are asked "What, in your opinion, caused this problem?" Over one-half (53.6%) do not provide a cause, while 45.2% report one perceived cause, and one individual (0.8%) reports two

causes. In general, EPs report a variety of causes (Table 16). Perceived causes will be reported in order from most to least frequently mentioned. The frequency for a given cause represents the percentage of EPs who report the given cause.

TABLE 16: Perceived Cause(s) Reported by the Eye Problem (EP) Group

Variable	% of EPs
Number of Perceived Causes Reported¹	(n = 125)²
0	53.6
1	45.2
2	0.8
Perceived Cause	(n = 125)²
Do Not Know Cause	53.6
Advancing Age	20.8
Eye-Related	8.8
Hereditary/Genetic	6.4
Environmental Factors	4.0
Other Health Conditions	4.0
Medical Error	3.2

¹ Respondents who do not know the cause of their eye problems are in the category of “0”.

² The sample does not total 126 as one individual did not answer the question (i.e. missing value).

³ The perceived cause percentages add up to more than 100% as one respondent reported two causes.

In addition to EPs (53.6%) who **do not know the cause** of their eye problems, there are six categories of causes that respondents report. These include: advancing age, eye related, hereditary/genetic, environmental factors, other health conditions, and medical error. The most frequently mentioned cause is **advancing age**, which is given by 20.8% of the EP group. Respondents in this group acknowledge “old age” or “aging” as the cause of their eye problem(s).

Close to one-tenth (8.8%) of the group make an **eye related** reference when asked to name the cause of their eye problems. Examples include “pressure behind the eye”, “growth in eye”, “nerves have dried up”, and “blood doesn’t go to entire of eyes”. **Hereditary/genetic** is named as the cause of eye problems by 6.4% of EPs. Examples of responses categorized here are “inherited”, and “weakness from birth that degenerated”.

Equal numbers of EPs (4.0%) report that their eye problem(s) is caused by **environmental factors**, or is the result of **other health conditions**. The environmental factors include climate reasons (e.g., “too much UV sunlight”), in addition to accidents in both the home and at work. A recounting of a childhood accident is given by one respondent, who states that “I fell when I was a young child - [and] hit [the] corner of my eye on the table”. Moreover, a few respondents implicate their work environments as the cause of their eye problems (e.g., “from working in the sewing factory”, and “welding torches flashes damaged eyes”). Examples of other health conditions that are given are diabetes, slight stroke, and arthritis. Finally, 3.2% of EPs indicate that **medical error** is what caused their eye problems (e.g., “poor job done on one eye [cataract surgery] 1950’s - vision poor because of that”, and “I think they [cataracts] may be caused by my shock treatments”).

Among this sample, not knowing the cause of one’s eye problems, or reporting advancing age as the cause of one’s eye problems is not associated with one’s age or gender (Appendix G - A & B). It is not possible to make such comparisons with the other perceived causes (eye related, hereditary/genetic,

environmental factors, other health conditions, and medical error) and the variables of age and gender, due to the relatively few respondents who report such causes.

Perceived Symptom(s)

To determine the perceived symptom(s) associated with eye problems, EPs are asked “What are the specific symptoms of this problems?” Over one-tenth (13.6%) of EPs do not report any symptoms, while 72.0% identify only one symptom, and 14.4% report two or more symptoms (Table 17). Perceived symptoms will be reported in order from most to least frequently mentioned. The frequency for a given symptom represents the percentage of EPs who report the given symptom.

TABLE 17: Symptoms Associated with Eye Problems Reported by the Eye Problem (EP) Group

Variable	% of EPs
Number of Symptoms	(n = 125) ¹
0	13.6
1	72.0
2+	14.4
Type of Symptom	(n = 125) ¹
Poor Vision	72.0
Eye Irritations	24.8
Headaches/Dizziness	1.6

¹ The sample does not total 126 as one respondent did not answer the question (i.e. missing value)

Not surprising, the most frequently mentioned symptom (72.0%) by EPs is **poor vision**. For example, one individual states that she “can’t read [the] phone book

without magnifying glasses". Moreover, she experiences blurred and double vision when her eyes are tired. Next, close to one-quarter (24.8%) of EPs state that they experience **eye irritations**. Examples of this symptom include "watering eyes", "itchy eyes", "eye pain", or "growth in the eye". Finally, only 1.6% of the EP group indicate that they have **headaches/dizziness**.

Somewhat surprising, reporting no symptoms is not associated with the length of time with eye problem(s) (Appendix G - C). In other words, having eye problem(s) for a longer amount of time is not indicative of an individual experiencing symptoms from the condition. Neither the symptoms of poor vision nor eye irritation are found to be associated with age, gender, or length of time with eye problem(s). (Appendix G - D & E). Finally, due to few respondents reporting the symptom of headaches/dizziness, it is not possible to make any comparisons with this symptom.

Amount of Interference

Turning to the amount that symptoms interfere with day to day living, over one-half (65.6%) of EPs report that the symptoms associated with their eye problems do not interfere at all with their day-to-day living (Table 18). In comparison, over one-third (34.4%) of EPs state that the symptoms interfere with their day-to-day living some, or a great deal.

To begin, neither of the socio-demographic characteristics (age and gender) are significantly associated with this strategy. Turning to the concept of appraisals, not knowing the cause of one's eye problem(s), attributing the cause to advancing age, reporting no symptoms, reporting poor vision (symptom), and the length of time with eye problem(s) are not significantly associated with the strategy of doctor visits/surgery.

In contrast, there is a statistically significant relationship between reporting eye irritation (symptom) and this course of action. EPs who do not report eye irritation (e.g., watery eyes, itchy eyes, eye pain, or growth in the eye) as a symptom (77.8%) are more likely to report the action of doctor visits/surgery, than EPs who do report eye irritation as a symptom (53.8%). The corresponding correlation statistic suggests, that although the relationship is statistically significant, it is not a particularly strong one ($\Phi = -.23$).

Cross-tabulations also reveal that both the amount of interference, and the amount of bother, are associated with the coping strategy of doctor visits/surgery. EPs who indicate that the symptoms associated with their eye problems cause them no interference in their daily lives (82.4%) are more likely to indicate doctor visits/surgery as an action taken, than EPs who indicate some or a great deal of interference (53.8%). A consideration of the correlation statistic indicates that the relationship is a moderate one ($\Phi = -.31$).

Similar to the amount of interference that is reported, EPs who indicate that

the symptoms associated with their eye problems do not cause them any bother (82.7%) are more likely to report the strategy of doctor visits/surgery, than EPs who state that their symptoms bother them some or a great deal (61.5%). However, although the relationship is statistically significant, the relationship is a weak one ($\Phi = -.21$).

Turning to the coping resources, the cross-tabulations reveal that none of the measures of health status (self-assessed health status, number of chronic health problems, and number of ADL/IADL limitations) are statistically associated with the coping strategy of doctor visits/surgery.

In terms of psychological resources, life satisfaction, self-efficacy, perceived control over health, external health locus of control, and internal health locus of control are not associated with this strategy. The remaining two psychological resources (self-esteem and medical skepticism) approach but do not reach statistical significance ($p < .10$). More specifically, there is a tendency, albeit not statistically significant, that those with relatively lower self-esteem (63.3%) are less likely to have visited a doctor or had surgery than those with relatively high self-esteem (80.4%). In addition, EPs with relatively higher medical skepticism scores (81.5%) are more likely to use this strategy than those with relatively lower scores (65.2%).

Only one of the seven measures of social resources (number of confidants) is found to be statistically significant at the $p < .05$ level. EPs who have fewer confidants (0 - 1) (81.5%) are more likely to report doctor visits/surgery than EPs who have

more confidants (2+) (63.0%). Notwithstanding the statistical significance of this association, the relationship is a weak one ($\Phi = -.21$). The other measures of social resources (marital status, living arrangements, size of family network, number of family network members seen at least weekly, and number of friends) are not significantly associated with the strategy of doctor visits/surgery. None of the material resources (monthly household income, and perceived adequacy of household income) are statistically associated with doctor visits/surgery. The social resource of perceived instrumental support and the material resource of education could not have their χ^2 values calculated due to limited sample sizes.

In summary, the bivariate analyses reveal that the coping strategy of doctor visits/surgery is associated with eye irritation (symptom), amount of interference, amount of bother, and the number of confidants that one has (Table 23). First, EPs who do not report eye irritation as a symptom are more likely to report the coping strategy of doctor visits/surgery than EPs who do report eye irritation. Second, individuals who report no interference are more likely to use this strategy than respondents who indicate some or a great deal of interference. Next, those who report no bother are more likely to report doctor visits/surgery than EPs who report some or a great deal of bother. Finally, EPs who have fewer confidants (less than two), are more likely to report the coping strategy of doctor visits/surgery than EPs who have two or more confidants.

There is also the tendency, albeit not statistically significant, that those with relatively higher self-esteem are more likely to have visited a doctor or had surgery than those with relatively low self-esteem. Lastly, EPs with relatively high medical skepticism scores appear to be more likely to use this strategy than those with relatively lower scores. Again this does not reach statistical significance. Attention will now turn to the multivariate analyses that focus on the coping strategy of doctor visits/surgery.

TABLE 23: Socio-demographic Characteristics, Appraisals, and Coping Resources Associated with Doctor Visits/Surgery (Bivariate Level)¹

VARIABLES	EPs More Likely to Use Doctor Visits/Surgery
Socio-demographic Characteristics	
Age	---
Gender	---
Appraisals	
Cause - Do Not Know	---
Cause - Advancing Age	---
Symptom - No Symptoms	---
Symptom - Poor Vision	---
Symptom - Eye Irritation	EPs who do not report eye irritation²
Length of Time With Eye Problem(s)	---
Amount of Interference	EPs who report no interference
Amount of Bother	EPs who report no bother²
Health Status	
Self-assessed Health Status	---
Number of Chronic Health Problems	---
Number of ADL/IADL limitations	---
Psychological Resources	
Life Satisfaction	---
Self-esteem	<i>EPs with relatively higher self-esteem scores²</i>
Self-efficacy	---
Perceived Control Over Health	---
External Health Locus of Control	---
Internal Health Locus of Control	---
Medical Skepticism	<i>EPs with relatively higher medical skepticism scores²</i>
Social Resources	
Marital Status	---
Living Arrangements	---
Size of Family Network	---
Number of Family Network Members Seen at Least Weekly	---
Number of Confidants	EPs who have fewer confidants²
Number of Friends	---
Perceived Instrumental Support	χ^2 not calculated as <5 cases in one or more cells
Material Resources	
Monthly Household Income	---
Perceived Adequacy of Household Income	---
Education	χ^2 not calculated as <5 cases in one or more cells

¹ Relationships significant at $p < .05$ are in bold, while those significant at $p < .10$ are in italics.

² Statistically significant but weak association ($\Phi < .30$)

— Indicates no statistically significant relationship at the bivariate level.

Doctor Visits/Surgery - Multivariate Results

The independent variables used in the doctor visits/surgery regressions include age and gender as examples of socio-demographic characteristics. Next, the appraisals of eye irritation (symptom), amount of interference, and amount of bother are included. Finally, self-esteem, medical skepticism, and number of confidants represent coping resources.⁶

Before the logistic regression analyses are conducted, a Pearson Product Moment Correlation Matrix test for multicollinearity is used to establish correlations between the independent variables. Correlation coefficients near or above 0.60 are considered strong (Hickey, 1986) and result in variables being entered into separate regression equations. The bivariate correlations between the eight independent variables are presented in Table 24. A moderate relationship (0.36) exists between gender and the number of confidants, with women tending to have more confidants than men. One problem of multicollinearity appears, as the correlation between the variables of amount of interference and amount of bother is 0.60. Subsequently, these two variables are entered into separate regression equations (Models 1 and 2).

⁶ For these analyses, age is continuous, and number of confidants includes the categories of 0, 1, 2, and 3+. The remaining variables are dichotomous.

**TABLE 24: Pearson Product Moment Correlation Matrix,
Independent Variables for Doctor Visits/Surgery Regressions**

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Gender	1.00							
(2) Age	-0.06	1.00						
(3) Eye Irritation (Symptom)	0.02	0.04	1.00					
(4) Amount of Interference	-0.20	0.17	0.19	1.00				
(5) Amount of Bother	-0.01	0.05	0.15	0.60	1.00			
(6) Number of Confidants	0.36	0.06	0.05	0.13	0.09	1.00		
(7) Self-esteem	-0.02	-0.13	-0.20	-0.21	0.02	-0.03	1.00	
(8) Medical skepticism	-0.03	-0.06	0.08	-0.14	-0.19	-0.07	-0.04	1.00

Note: Strong associations are in bold.

The results of the logistic regression models for the coping strategy of doctor visits/surgery are presented in Table 25. The first regression (Model 1) includes the amount of interference. Overall, the full model's high $-2LL$ value (94.53) demonstrates that, in combination, socio-demographic characteristics, appraisals, and coping resources, offer a low level of explanation for the use of doctor visits/surgery.

The first block of variables to enter the regression equation (Step 1) are the two socio-demographic characteristics (age and gender). A consideration of the Improvement Chi-square value reveals that the socio-demographic component of the model does not contribute significantly to the goodness-of-fit of the model to the data, when considered on their own. This suggests that the association between age or gender and doctor visits/surgery is negligible.

The second block of variables to enter the equation (Step 2) are the appraisals. The Improvement Chi-square value illustrates that appraisals contribute significantly to the goodness-of-fit of the model after taking socio-demographic characteristics into account. The negative and significant logistic regression coefficient (B) and negative R value for the amount of interference indicates that EPs whose symptoms⁷ do not interfere with their daily lives are more likely to use the strategy of doctor visits/surgery, as compared to EPs who state that their symptoms interfere some/a great deal. In contrast, the symptom of eye irritation makes a minimal or no contribution to the explanation of the model.

Finally, the coping resources are entered into the equation (Step 3). As the Improvement Chi-square is statistically significant, the variables representing the coping resources (self-esteem, medical skepticism, and number of confidants) do contribute significantly to the goodness-of-fit of the model, after taking into consideration the level of explanation provided by the socio-demographic characteristics, and appraisal variables. The negative and significant logistic

⁷ Symptoms associated with their eye problem(s).

regression coefficient (B) and negative R value for confidants reveals that EPs with fewer confidants are more likely to use this strategy than those with more confidants. The remaining coping resources of self-esteem and medical skepticism are not significant on their own, although the latter is approaching significance. The number of confidants is the only variable that is significant in the full model, as the amount of interference ceases to be significant after the coping resources have been added.

In order to understand why the amount of interference does not remain significant in the full model, additional models are considered. One approach involves excluding each of the coping resources from the model. First, when medical skepticism is excluded from the model, the amount of interference is significant in the full model (Appendix H - A). This suggests that the addition of medical skepticism results in the amount of interference no longer being significant in the full model. The same was not found when either self-esteem, or confidants were excluded from the model (Appendix H - B & C). Finally, when coping resources (as a group) are entered prior to appraisals, the amount of interference is still not significant in the full model (Appendix H - D). This suggests that the order that the variables enter the model does not affect variable significance levels. This final model confirms that the amount of interference does not retain its significance when coping resources have been taken into account.

As interference and bother are multicollinear, the second logistic regression equation conducted with the coping strategy of doctor visits/surgery has the variable of bother replacing interference (Model 2). This model's high $-2LL$ value (90.71)

contrast, the concept of appraisals is found to be significant. In the first equation (includes amount of interference), no interference increases the likelihood of EPs using this strategy. The second equation (includes amount of bother) also finds that appraisals contribute to the use of doctor visits/surgery; however, the variable of eye irritation (symptom) is found to be significant rather than the amount of bother. Finally, both models suggest that coping resources as a group appear to contribute to the explanatory power of the model, with the number of confidants being significant in both models, and medical skepticism significant in Model 2, and approaching significance ($p = .07$) in Model 1.

TABLE 26: Socio-demographic Characteristics, Appraisals, and Coping Resources Associated with Doctor Visits/Surgery (Multivariate Level)¹

VARIABLES	EPs More Likely to Use Doctor Visits/Surgery²
Socio-demographic Characteristics	
Age	---
Gender	---
Appraisals	
Symptom - Eye Irritation	<i>EPs who do not report eye irritation</i>
Length of Time With Eye Problem(s)	---
Amount of Interference	<i>EPs who report no interference⁴</i>
Amount of Bother	---
Coping Resources	
Self-esteem (Psychological Resource)	---
Medical Skepticism (Psychological Resource)	<i>EPs who have relatively higher medical skepticism scores</i>
Number of Confidants (Social Resource)	EPs who have fewer confidants

¹ Only those variables that have a significance level of $p < .10$ at the bivariate level, as well as age and gender are listed here. For a complete listing of variables examined at the bivariate level, see Table 23.

² The level of significance that is used is $p < .05$

³ Variables significant in one of the models are in italics, while those significant in both models are in bold.

⁴ The amount of interference is only significant prior to coping resources being included in the model.

--- Indicates no statistically significant relationship at the multivariate level.

The analyses reveal that neither of the socio-demographic characteristics (age and gender) are significantly associated with this strategy at the bivariate level. The two measures of appraisals that are found to be approaching statistical significance, are eye irritation (symptom) and amount of interference. Although not statistically significant at the $p < .05$ level, EPs who report eye irritation (26.9%) tend to report the use of EQ/DEV more so than EPs who do not report this symptom (12.3%). There is also the tendency for EPs who report some/a great of interference to report this strategy (25.6%) as compared to EPs who report no interference (11.8%). Not knowing the cause of one's eye problems, reporting the cause as advancing age, and length of time with eye problem(s) are not found to be associated with the coping strategy of EQ/DEV. Poor vision and reporting no symptoms χ^2 values are not calculated because of limited sample sizes.

The analyses disclose that none of health status indicators (self-assessed health, number of chronic health problems, number of ADL/IADL limitations) are at the bivariate level significantly associated with the coping strategy of medication use. In contrast to the two previously considered coping strategies, it is found that one of the psychological resources (perceived control over health) is statistically associated with use of EQ/DEV.¹² Analyses indicate that EPs who feel that they have a great deal of control over their own health (30.4%) are more likely to report the strategy of EQ/DEV than EPs who state that they perceive either no/some control over their own health (13.1%). Notwithstanding the association, the relationship is a weak one (Phi

¹² $p < .05$ when three decimal places are considered.

= .19). The other measures of psychological resources (life satisfaction, self-esteem, self-efficacy, perceived control over health, external and internal health locus of control, and medical skepticism) are not associated with the strategy of EQ/DEV.

Turning to social resources, the size of family network, number of family network members seen at least weekly, number of confidants, and number of friends are not found to be associated with EQ/DEV use. Both marital status and living arrangements approach the suggested level of significance. EPs who are currently married (23.4%) tend to be more likely to report this strategy than EPs who are not currently married (11.5%). It follows, then, that those who live with one or more others (22.8%), are more likely than those who live alone to report the use of EQ/DEV (9.8%). The χ^2 for perceived instrumental support could not be calculated due to small cell sizes. Finally, none of the material resources (monthly household income, perceived adequacy of household income, education¹³) are, at the bivariate level, significantly associated with this strategy.

In summary, there is only one variable (perceived control over health) that is significantly associated with the coping strategy of EQ/DEV at the $p < .05$ level. Eye irritation, amount of interference, marital status, and living arrangements are found to be approaching the suggested level of significance (Table 33). As previously mentioned, the results from this particular set of bivariate analyses must be interpreted with caution, due to the few EPs ($n = 18$) who report the use of this strategy.

¹³ χ^2 is not calculated due to less than five cases being in one or more of the cells.

The first block of variables to enter the regression equation (Step 1) are the two socio-demographic characteristics. The Improvement Chi-square statistic implies that the socio-demographic component of the model does not contribute significantly to the goodness-of-fit of the model to the data. Generally, age and gender are unimportant in explaining the use/non-use of special equipment/devices.

The second block of variables to enter the equation (Step 2) are the appraisals. The Improvement Chi-square value illustrates that appraisals do not contribute significantly to the goodness-of-fit of the model after taking socio-demographic characteristics into account. Neither eye irritation nor amount of interference are statistically significant.

Finally, the coping resources are entered into the equation. As the Improvement Chi-square is significant, the block of variables representing the coping resources component of the equation contributes significantly to the goodness-of-fit of the model, after taking into consideration the level of explanation provided by the socio-demographic characteristics, and appraisal variables. Moreover, although the coping resources as a group contribute to the model, only one of its two measures is near the suggested significance level. Perceived control over health is just over ($p = .052$) the suggested significance level, while living arrangements is not significant.

In response to the variables of living arrangements and marital status being multicollinear, the second logistic regression equation is conducted with the variable of marital status replacing living arrangements (Model 2). This model's $-2LL$ value (81.40) is similar to the one that is reported for Model 1 (80.38). This demonstrates

that this combination of variables (marital status rather than living arrangements), does not offer a larger or smaller level of explanation for the use of EQ/DEV.

The first block of variables to enter the regression equation (Step 1) are the two socio-demographic characteristics. The Improvement Chi-square value implies that the socio-demographic component of the model does not contribute significantly to the goodness-of-fit of the model to the data. Neither age nor gender emerge as statistically significant.

The second block of variables to enter the equation (Step 2) are the appraisals. The Improvement Chi-square value illustrates that appraisals do not contribute significantly to the goodness-of-fit of the model after taking socio-demographic characteristics into account. In other words, the association between eye irritation, and the use of EQ/DEV is negligible among this group of EPs. This is also found to be the case for the amount of interference and the use of this strategy.

Finally, the coping resources are entered into the equation (Step 3). Here, the Improvement Chi-square is not statistically significant. This suggests that this block of variables does not contribute to the goodness-of-fit of the model, after taking into consideration the level of explanation provided by socio-demographic characteristics, and the appraisal variables. However, the positive and significant ($p < .05$) logistic regression coefficient (B) and positive R value for the variable perceived control over health implies that EPs who report a great deal of control over their own health, are more likely to report the strategy of EQ/DEV, as compared to EPs who report no/some control over their own health. The coping resource of marital status is not

found to make a significant contribution to the explanation of the model. In the full model, perceived control over health is the only variable that remains significant.

Table 36 includes a summary of the variables that are significant at the multivariate level with the coping strategy of EQ/DEV. In summary, the two regression models that are conducted with the coping strategy of EQ/DEV yield similar results. In both cases, socio-demographic characteristics, and appraisals are not found to be related to the use of EQ/DEV as a coping strategy. The difference that exists between the two models involves the coping resources. In the first model (includes living arrangements), coping resources are found to contribute to the goodness-of-fit between the model and the data, while perceived control over health approaches statistical significance. In comparison, the findings from the second model (includes marital status) suggest that while perceived control over health is significant on its own, coping resources as a group are not.

In order to understand why coping resources as a group are significant in one model, and not in the other, an additional regression is conducted (Appendix H - F). The model does not include either living arrangements or marital status. The rationale for excluding these variables is to explore their influence on perceived control over health, and coping resources as a whole. The model's findings reveal that when living arrangements and marital status are excluded, not only does perceived control over health remain significant in the full model, but coping resources as a group are also significant. This suggests that their exclusion from the model does not effect the statistical significance of either perceived control over

health, or coping resources. This is not surprising given that at the bivariate level both living arrangements and marital status were only approaching the recommended level of statistical significance. To conclude the discussion on the coping strategy of use of special equipment/devices, it appears that both socio-demographics and appraisals do not in combination, or individually, strongly predict the use of special equipment/devices to deal with one's eye problem(s). In comparison, the coping resource of perceived control over health is associated with the coping strategy of EQ/DEV.

TABLE 36: Socio-demographic Characteristics, Appraisals, Coping Resources Associated with the Use of Special Equipment/Devices (Multivariate Level)¹

VARIABLES	EPs More Likely to Use Special Equipment/Devices²
Socio-demographic Characteristics	
Age	---
Gender	---
Appraisals	
Symptom - Eye Irritation	---
Amount of Interference	---
Coping Resources	
Perceived Control Over Health (Psychological Resource)	EPs who perceive to have a great deal of control over their health³
Marital Status (Social Resource)	---
Living Arrangements (Social Resource)	---

¹ Only those variables that have a significance level of $p < .10$ at the bivariate level, as well as age and gender are listed here. For a complete listing of variables examined at the bivariate level, see Table 33.

² The level of significance that is used is $p < .05$

³ Perceived Control Over Health is significant in Model 2 (Marital Status included and Living Arrangements excluded), and approaching significance ($p = 0.52$) in Model 1 (Living Arrangements included and Marital Status excluded).

--- Indicates no statistically significant relationship at the multivariate level.

Chapter Summary

This chapter reported on the findings of Research Question # 3. The first section of the chapter focused on a comparison between EPs who do and who do not report taking an action(s) to deal with their eye problem(s). Following this comparison, the most frequently mentioned coping strategies were considered. Socio-demographic characteristics, appraisals, and coping resources were considered in relation to the specific coping strategies. In order to determine what factors are associated with the use of certain strategies, both the results of bivariate and multivariate analyses were presented. In general, socio-demographic characteristics were not found to influence the use of particular strategies, while in some cases both appraisals and coping resources were found to be predict the use of certain coping strategies. The following chapter discusses the meaning of these findings within the context of the conceptual framework.

CHAPTER SEVEN: DISCUSSION AND CONCLUSIONS

Chapter Introduction

The primary purpose of this final chapter is to highlight the major findings of this research, and to provide a context by making comparisons to the existing literature. In addition, recommendations for future research will be included. Next, the study's limitations will be presented. In closing, the implications of the research findings for older adults who are adapting to eye problems, and for rehabilitation professionals who try to help them will be considered.

Differences Between Older Adults With and Without Eye Problems

This research began by examining the differences that exist between older adults with and without eye problems in terms of socio-demographic characteristics and coping resources.¹ The tendency has been for researchers to focus on a particular type of coping resource (e.g., Reinhardt, 1996), while the aim of this research was to gain a better understanding of the variety of coping resources that older adults possess. Comparisons according to socio-demographic characteristics will be considered first, followed by coping resources.

¹ See Table 9 for a summary of the differences between EP and NEP groups.

Socio-demographic Characteristics

The findings of this research reveal relationships between age and eye problems, and gender and eye problems. Other studies in the area have also determined that EPs are older (Branch et al., 1989; Kleinschmidt, 1995), and are more likely to be female than NEPs (Salvage, 1995). Notwithstanding these findings, it has been reported that although age is associated with eye problems, it does not cause them (Cherry, Keller, & Dudley, 1991). Finally, consistent with the work of Branch and colleagues (1989), when age is controlled for, the relationship between eye problems and gender no longer exists.

Health Status

EPs and NEPs were found to differ in terms of all three of the health status measures. Consistent with the work of Branch et al. (1989), EPs were found to self-assess their health poorer, and to require help with more activities of daily living (ADL/IADL) than NEPs.² In addition, EPs, on average, had more chronic health problems to contend with when compared to NEPs. It is difficult to make a comparison with the existing literature in terms of chronic health problems, as researchers include different health problems.

² There are some differences across the two studies in terms of what ADL and IADL items are included. Both studies include the basic ADLs of dressing, eating, bathing, and walking, while the current study also includes toileting. Branch et al. (1989) also ask about transferring, and grooming. Turning to instrumental ADLs, both studies include shopping, preparing meals, doing household tasks, and handling money. The current study also includes using the telephone, taking out trash, and taking medication, while Branch and colleagues ask about transportation needs.

Discriminant function analyses findings suggest that ADL/IADL limitations and number of chronic health problems are most strongly associated with someone having or not having eye problems. The tendency for EPs to have more challenges to their health could possibly influence how they cope with their eye problems. However, researchers such as Lazarus and Folkman (1984) speculate that challenges to one's health do not necessarily negatively influence coping.

Thus, whereas health and energy certainly facilitate coping efforts - it is easier to cope when one is feeling well than when one is not - people who are ill and enervated can usually mobilize sufficiently to cope when the stakes are high enough (Lazarus & Folkman, 1984, p.159).

Psychological Resources

The second set of coping resources that were considered were psychological resources. In general, when life satisfaction, self-esteem, and self-efficacy scores were considered, both EPs and NEPs scored relatively high (see Table 6). Therefore, any differences that exist between the two groups must be considered with this in mind. When compared to NEPs, EPs had lower life satisfaction scores. This difference has also been reported by other researchers (e.g., Davis et al., 1995), albeit with slightly different measures of life satisfaction, and with different samples. Using a longitudinal research design, Horowitz and colleagues (1994) explored whether the relationship between eye problems and lower levels of life satisfaction is one that persists over time.³ Data in this study were collected over three points in time. First, baseline data were obtained when individuals were referred to the Lighthouse for

³ Horowitz and colleagues (1994) measure Life Satisfaction with the use of the Life Satisfaction Inventory (LSI-A) (Neugarten, Havighurst, & Tobin, 1961), modified by Adams, 1969.

vision rehabilitation services. Time 1 interviews were conducted as soon as possible after baseline (no range is provided by the researchers), and before rehabilitation services began. Time 2 represents post-rehabilitation service, and was gathered approximately two years after the Time 1 interview (Horowitz et al., 1994).

Horowitz and colleagues (1994) report that having a greater number of functional vision problems⁴ is associated with lower levels of life satisfaction at time one. However, the same was not found to be true at baseline, or at time two. Overall, it appears that eye problems do contribute somewhat to one's level of life satisfaction. However, it is also clear that there are many other factors which contribute to one's life satisfaction.

Next, EPs were found to have lower self-esteem scores than NEPs. This finding is in contrast to the results reported by Davis et al. (1995). However, their study only focused on individuals with and without macular degeneration, and included a slightly different measure of self-esteem.⁵

Thirdly, self-efficacy scores were found to vary across the sample, with EPs scoring slightly lower than NEPs. Next, EPs perceived themselves to possess less control over their health than NEPs. Lastly, EPs and NEPs did not differ in terms of health external or internal locus of control, or medical skepticism. The reviewed literature does not include mention of differences between EPs and NEPs in terms of self-efficacy, perceived control over health, or health locus of control. Such

⁴Functional vision problems included distance acuity, number of eye diagnoses, and number of optical devices and non-optical devices used at baseline.

⁵ Davis and colleagues (1995) measure self-esteem with the Revised Feelings of Inadequacy Scale (RFIS) (Eagly, 1967).

resources have the potential to assist one with the adjustment process (Dodds, Ferguson, Hawes, & Yates, 1994); therefore, it is important for future research to examine these concepts in relation to coping with eye problems.

Social Resources

The third group of coping resources that were considered were social resources. Researchers such as Reinhardt (1996) encourage the use of multiple measures of social resources when considering older adults with vision loss. In the case of this research, only one of the seven social resource indicators reveals differences across the two groups. EPs were less likely than NEPs to be currently married. This finding was expected given that EPs tend to be older, and are more likely to be female than NEPs, and the relationship between age and marital status, and gender and marital status (Gee & Kimball, 1987).

No differences were found between EPs and NEPs in terms of living arrangements, the size of family network, number of family network members seen at least weekly, number of confidants, number of friends, and perceived instrumental support. Although the existing literature has not specifically considered many of these indicators, Branch and colleagues (1989) also found no differences between EPs and NEPs in terms of social contact with others, and number of confidants. It is encouraging that the data suggest that EPs and NEPs do not differ significantly in terms of the social resources that they have available to them. This is important, as

some researchers (Orr, 1991; Warnke, 1991) have argued that social resources are the most influential coping resource that one can possess.

Material Resources

The last group of resources that were considered were material resources. No differences were found between EPs and NEPs in terms of perceived adequacy of household income, and education. However, it was found that the EP group had lower household incomes than the NEP group. Salvage (1995) also reports that EPs report more problems with income than NEPs.

In summary, there are certain relationships that exist between socio-demographic characteristics and eye problems, and individual coping resources and eye problems. However, it is important to acknowledge that except for the relationship between chronic health problems and eye problems, all of the relationships between coping resources and eye problems are weak. This suggests that EPs do not appear to be disadvantaged in terms of the coping resources they have access to when compared to NEPs.

Describing the Situation of EPs

Prior to investigating the actions that EPs take to deal with their eye problems, it was necessary to describe the situation of people who were living with vision loss in later life. In summary, the large majority of the group have had their eye problems diagnosed by a health care professional, while the length of time since the diagnosis,

and the length of time with the problems varied across the group. Eye conditions/diseases were mentioned by some respondents, with the majority of these individuals indicating that they had cataracts.

Over one-half of EPs stated that they did not know the cause of their eye problems. In comparison, close to one in five EPs identified the perceived cause of advancing age. Davis and colleagues (1995) also asked respondents the extent to which they understood the cause of their vision loss. It was reported that respondents fell into the three categories of correct interpretation (33%), some idea (30%), and did not know cause/wrong idea (37%). Therefore, it is not surprising that such a large proportion of the current sample did not know the cause of their eye problems. Finally, the most frequently mentioned symptoms associated with the eye problem(s) were poor vision and eye irritation. In general, these symptoms were reported to interfere with one's activities, and to bother one emotionally.

Following a description of the situation of EPs, the focus shifted to the coping strategies used by EPs. Although a variety of strategies were identified by respondents, all of them were examples of problem-focused strategies. The most frequently mentioned strategies were doctor visits/surgery, medication use, use of special equipment/devices (EQ/DEV), and lifestyle adjustments.

The recognition that EPs use a variety of problem-focused strategies is consistent with the findings reported by Horowitz et al. (1994). It should be noted that these researchers refer to instrumental coping strategies; however, this category is equivalent to the category of problem-focused strategies. Respondents in their

study acknowledge using close to one-half (47.8%) of the instrumental strategies that were listed. However, the use of these strategies is argued to decrease over time.

The finding of change in utilization of instrumental strategies should not be surprising. When individuals begin to experience a health problem, there is often a strong tendency to act aggressively to find out information and explore alternative treatments. However, over time, these strategies are not as useful, nor necessarily as needed, as the condition stabilizes (Horowitz et al., 1994, p. 66).

The current research is not based on a longitudinal design; therefore, it is not possible to comment on whether this sample of EPs uses such strategies less or more than they did in the past.

The tendency for this sample of EPs to report problem-focused strategies is not surprising for a number of reasons. First, as a large majority have had their eye problems diagnosed by a health care professional, the likelihood that actions taken reflect those that would be monitored by these professionals (e.g., doctor visits/surgery, medication use) is increased. Secondly, the absence of non-medical strategies is consistent with the general under-reporting of self-care type strategies (Edwardson, Dean, & Brauer, 1995). It may be that the individuals do not acknowledge self-care type strategies as important as the treatment options offered to them by health care professionals.

Thirdly, the absence of emotion-focused strategies may be due in part to the wording of the question. Respondents were asked "What actions, if any, do you take to deal with this problem?" The word "action" may have encouraged respondents to report behaviors, rather than to consider emotions. A question such as "What emotions have your eye problems produced, and how have you dealt with them?"

could potentially draw out some of the emotion-focused strategies that have been used by EPs.

Finally, as the information was obtained through self-reporting, respondents may have neglected certain things that they do to manage with their vision loss (e.g., arranging furniture in a clutter free manner) which has since become a part of everyday life. This is compounded by the fact that most age related eye problems are gradual in nature, and techniques are introduced slowly over time (Reinhardt, 1996). The wording of the question and the reliance on self-reporting are somewhat related in that a better question could potentially assist respondents in providing a broader range of actions that they take to deal with their eye problem(s).

Describing the situation of EPs, and the actions that they take to deal with their eye problems is significant for a number of reasons. First, a description of this sample revealed that EPs represent a diverse group of individuals. Not only did they differ in terms of eye related factors (e.g., eye conditions/diseases) but they also differ in terms of how they appraised (e.g., perceived cause) their situations. These differences suggest that aspects such as professional services need to be flexible to accommodate a diverse group of individuals. Finally, a consideration of the coping strategies reveals the predominance of problem-focused strategies. Notwithstanding the tendency to report these types of strategies, it was important to consider the variation that does exist in strategies, and the factors that were associated with these differences.

Factors That Are Associated With Coping Strategies

A review of the literature in the area of coping with eye problems revealed that little attention has been placed on the factors that influence how one copes, and the actions that he/she takes. Moreover, past research does not appear to be based on conceptual or theoretical models. This limitation of the literature motivated the current research to be based on a modified version of Lazarus and Folkman's (1984) conceptual model. It follows, then, that the final objective of this research was to explore the extent to which socio-demographic characteristics, appraisals, and coping resources are related to the coping strategies that were reported by EPs. A description of the specific factors that were found to be associated with each of strategies can be found in Chapter Six, while the focus here will be on the influence that socio-demographics, appraisals, and coping resources have on the strategies that were identified.

Socio-demographic Characteristics

Researchers (e.g., Moos & Schaefer, 1984) suggest that socio-demographic characteristics such as age and gender may influence one's adjustment or the coping process. In this research, the direct relationship between socio-demographic characteristics and coping strategies was considered. There was no association found between age and the use of doctor visits/surgery, medication use, or the use of special equipment/devices (Table 37). Similarly, no association was found between gender and the use of any of the three most frequently identified coping strategies.

TABLE 37: Socio-demographic Characteristics, Appraisals, and Coping Resources Associated with Coping Strategies

	Doctor Visits/Surgery		EPs More Likely to Use the Strategy		Use of Special Equipment/Devices	
	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate
Socio-demographic Characteristics						
Age	---	---	---	---	---	---
Gender	---	---	---	---	---	---
Appraisals						
Cause - Do Not Know	---	---	---	---	---	---
Cause - Advancing Age	---	---	---	---	---	---
Symptom - No Symptoms	---	---	---	---	---	---
Symptom - Poor Vision	---	---	---	---	---	---
Symptom - Eye Irritation	No Eye Irritation	No Eye Irritation ¹	No Poor Vision	Has Eye Irritation Longer Time With Eye Problems	Has Eye Irritation	Has Eye Irritation
Length of Time With Eye Problem	---	---	---	---	---	---
Amount of Interference	No Interference	No Interference ²	---	---	Some/A Great Deal	---
Amount of Bother	No Bother	---	---	---	---	---
Health Status						
Self-assessed Health Status	---	---	Better Self-Assessed Health	---	---	---
# of Chronic Health Problems	---	---	---	---	---	---
Number of ADL/IADL limitations	---	---	---	---	---	---
Psychological Resources						
Life Satisfaction	---	---	---	---	---	---
Self-esteem	Higher Self-esteem	---	---	---	---	---
Self-efficacy	---	---	---	---	---	---
Perceived Control (PC) Over Health	---	---	---	---	More Perceived Control Over Health	More Perceived Control Over Health
External Health Locus of Control	---	---	---	---	---	---
Internal Health Locus of Control	---	---	---	---	---	---
Medical Skepticism	Higher Medical Skepticism	Higher Medical Skepticism ¹	---	---	---	---

¹ Only significant in one of two models.

² Only significant prior to coping resources being included in the model.

--- Indicates no statistically significant relationship at the bivariate level or the multivariate level.

Table 37 continued

	Doctor Visits/Surgery			EPs More Likely to Use the Strategy			Use of Special Equipment/Devices		
	Bivariate	Multivariate	Multivariate	Bivariate	Medication Use Multivariate	Bivariate	Bivariate	Multivariate	Multivariate
Social Resources									
Marital Status	---	---	---	---	---	---	---	---	---
Living Arrangements	---	---	---	---	---	---	Currently Married	---	---
Size of Family Network	---	---	---	---	---	---	Lives With Other(s)	---	---
Number of Family Network Members Seen at Least Weekly	---	---	---	---	---	---	---	---	---
Number of Confidants	Fewer confidants	Fewer confidants	Fewer confidants	---	---	---	---	---	---
Number of Friends	---	---	---	---	---	---	---	---	---
Perceived Instrumental Support	---	---	---	---	---	---	---	---	---
Material Resources									
Monthly Household Income	---	---	---	---	---	---	---	---	---
Perceived Adequacy of Income	---	---	---	---	---	---	---	---	---
Education	---	---	---	---	---	---	---	---	---

--- Indicates no statistically significant relationship at the bivariate level or the multivariate level.

Appraisals

In contrast to socio-demographic characteristics, appraisals were more likely to be associated with coping strategies (Table 37). The relationship between appraisals and coping strategies was expected, as appraisals represent an individual evaluating his/her demanding situation, and the various factors that may either increase or decrease the threat or stress associated with the situation (Lazarus & Folkman, 1984). It follows, then, that if the situation is perceived to require their attention, actions will be taken. Following such a realization, a decision is made as to what type of action to implement. An individual may decide that self-care is sufficient, while in other cases seeking professional care may be deemed as more appropriate.

In general, perceived causes were not found to be associated with the use of certain strategies. More specifically, even the causes identified by respondents (e.g., advancing age, hereditary/genetic) that were beyond their control, were not found to be indicative of either taking or not taking a particular action. In summary, identifying or not identifying a specific perceived cause does not appear to be associated with the action(s) that one takes to deal with the eye problem(s).

In contrast, perceived symptoms were found to be influential. For example, at the bivariate level only, EPs who identified eye irritation were more likely to report medication use, and the use of EQ/DEV than EPs who did not report the symptom. The opposite was found in terms of doctor visits/surgery. However, it may be that EPs who did identify eye irritation had it alleviated by the use of doctor visits/surgery.

The relationship that appears to exist between perceived symptoms and coping strategies is not surprising, as EPs may believe that their symptom(s) will be alleviated with the use of a certain strategy.

Finally, for certain strategies, the length of time with the eye problem(s), the amount of interference, and the amount of bother were found to increase the likelihood of the action being identified. The finding that these last three appraisals do not consistently appear across the strategies may suggest that these factors only influence certain types of coping strategies, and are not as important when coping is considered more generally.

Coping Resources

In this research, the direct relationship between coping resources and coping strategies was considered. Unlike appraisals, coping resources were generally found not to be associated with the use of certain coping strategies (Table 37). Each of the four types of coping resources will be considered in turn.

Health Status

The health status indicators of self-assessed health status, chronic health problems, and ADL/IADL limitations were not found to be related to the actions that were taken to deal with eye problems. To begin, although the measure of self-assessed health status reflects how individuals perceive their health status, it does not provide us with an indication of how they self-assess the health of their eyes. The

inclusion of a self-assessed health status measure directly referring to the eyes, may have revealed alternative findings. For example, poorer self-assessed health of the eyes may be associated with an increased likelihood of doctor visits. Finally, the non-importance of chronic health problems and ADL/IADL limitations serves to further strengthen the argument that one's general health status is not necessarily associated with how they care for different parts of their body.

Psychological Resources

The second set of coping resources to be considered are psychological resources. When considered in combination with other factors, life satisfaction was not found to be associated with the use of doctor visits/surgery, medication use, or the use of special equipment/devices. The same results appeared for both self-esteem and self-efficacy.

It may be that the severity of the eye problems within this population is affecting the relationship between specific psychological resources (e.g., life satisfaction) and coping strategies. While the current sample includes EPs with mild, moderate, and severe conditions, it may be that when the severity of the eye problem(s) is controlled for, relationships between psychological resources and coping strategies exist.⁶ For example, life satisfaction scores may be lower for EPs with more severe eye problems. It may follow, then, that these individuals may be more willing to use EQ/DEV with the hopes of improving their life satisfaction.

⁶ The terms mild, moderate, and severe are not referring to specific acuity levels. They simply serve as an indication of the relative differences in severity that exist between EPs.

Unfortunately, the current sample does not allow for this sort of analysis as there is no information on the severity of the eye problem(s).

In contrast to the previously mentioned psychological resources, perceived control over health, and medical skepticism were found to be associated with the use of individual coping strategies. EPs with more perceived control over their health were found more likely to identify the coping strategy of EQ/DEV when compared to EPs with less perceived control over health. In addition, EPs with greater medical skepticism were more likely to report doctor visits/surgery when compared to EPs with less medical skepticism. At first, this last relationship may seem unusual. However, as EPs identified actions already taken, it may be that the reported doctor visits/surgery have increased their medical skepticism. However, as there is no information on medical skepticism prior to EPs consulting doctors or having surgery, it is not possible to declare this with any certainty. In summary, although certain psychological resources were associated with certain coping strategies, the findings do not reveal a strong relationship between this sort of coping resource and coping strategies.

Social Resources

With the exception of number of confidants, none of the social resources studied here were found to increase the likelihood of using a specific coping strategy. This relationship is somewhat surprising and may be explained in a number of ways. First, except for (number of) confidants, and perceived instrumental support, the

remainder of the social resources simply reflect the number of individuals whom an EP identifies (e.g., number of friends, number of family network members), while not considering the nature of the relationships. In comparison, a confidant is someone who one can talk to, and trust with his/her concerns, while perceived support targets the help that individuals think is available to them from others. Among the social resource measures included here, these two come closest to measuring the nature of a relationship. The findings here suggest that EPs with fewer confidants are more likely to report doctor visits/surgery than EPs with more confidants. Having less confidants may lead one to seek out guidance or treatment options from a professional, as they do not have peers with whom they can discuss their eye problem(s).

Next, it may be that social resources are not associated with the use of the strategies that were identified by these EPs. However, social resources could possibly be more influential in terms of other strategies. To illustrate, it may be that individuals who have fewer social resources would be more likely to attend a vision loss support group than individuals who have more social resources.

Material Resources

The final set of resources that were considered were material resources. Researchers such as Lazarus and Folkman (1984) recognize the difficulty in establishing the influence of such resources. In the case of this research, material resources (monthly household income, perceived adequacy of household income, and

education) are not directly related to the strategies that were considered here. Doctor visits/surgery are generally covered by the Canadian health care system (Taylor, 1987); therefore, it should not be surprising that there is no relationship between this particular strategy and material resources. If the action was one that required the use of private funds, individuals with fewer material resources may have been less likely to identify the strategy as an action that they take to manage their eye problems.

Conceptual Framework

The conceptual framework that has guided this research has both advantages and disadvantages. To begin, the framework should be commended for its comprehensiveness. The coping resources of health status and psychological resources attempted to measure both one's physical and mental health, while social and material resources served as additional types of coping resources. Secondly, the broad nature of the framework lent itself to the operationalization of its concepts, and was amenable to testing. More specifically, the framework allowed for the consideration of a number of coping resources, and the potential impact that they would have on coping strategies. Moreover, although the current research findings did not uncover many direct relationships between coping resources and coping strategies, it can still be argued that health status, psychological resources, social resources, and material resources are coping resources that may on a more general level assist an individual when dealing with his/her eye problems.

In keeping with the work of Lazarus and Folkman (1984), the concepts were considered in a particular order (socio-demographic characteristics, appraisals, coping resources, coping strategies). By following this order, the current research may not have revealed all of the relationships that exist. Furthermore, it may be that relationships between concepts exist in more than one direction, thus concealing the complexity of the coping process. In summary, the conceptual framework that was adopted for this research is somewhat over-simplified, and may require changes in order to better get at how older adults cope with eye problems.

Additional disadvantages associated with the use of this framework may have less to do with the framework itself, and more to do with the type of data that was used, and the composition of the sample. The use of secondary data limited the way in which the concepts could be operationalized, which may have contributed to the current findings.

In comparison, this conceptual framework may be more successfully applied when used in relation to primary data collection. The development of one's own measures and concepts, may allow for a better fit between the model and the data than was the case here. For example, by including additional measures specific to eye problems, the model might be better equipped to explain the variation that exists in terms of coping with eye problems. An example of an appraisal that could be included is self-assessed severity of eye problems, as it may be that the severity of the eye problems is indicative of the use of certain coping strategies.

The sample of EPs that were used here may have also influenced the effectiveness of the model in terms of explaining the coping process. As previously mentioned, the EPs considered here represent a diverse group of individuals. They differed in terms of their conditions/diseases, the length of time with eye problem(s), and perceived cause(s) and symptoms. It may be that if sub-groups of EPs (e.g., only those with cataracts) were identified individually, the model may have more closely reflected the way that they cope. By considering all types of EPs simultaneously, the differences in coping that exist may have been concealed. In other words, the model may be better at explaining how some groups of EPs group cope rather than how all EPs cope.

Recommendations For Future Research

While this study has contributed to the research literature on managing with eye problems in later life, there are many areas that future researchers need to focus on. In a most general sense, the question of generalizability of the findings of this study reveals the need for additional research in the area. The current sample is relatively small in size; therefore, a sample with a greater number of individuals in each of the age categories, as well as a greater proportion of males, would enhance the generalizability of the findings. As it stands now, the sample tends to be older, and female.

Next, there are some measures relating to eye problems that are noticeably absent from the data set, that future research needs to consider. For example,

respondents were not asked to indicate the name of the eye condition/disease that they had. It may be that certain coping strategies are associated with particular conditions/diseases. In addition, there was no objective or subjective indication of the severity of the eye problems. This could have been gathered with either a clinical measurement (e.g., acuity levels), or by the self-reporting of respondents. The presence of such a measure would have allowed for a consideration of the relationship between the severity of the eye problems, and the actions that are taken to deal with such problems.

There is also the need for more longitudinal studies, perhaps qualitative in nature, which focus on the management of eye problems in later life. As the present research relied on cross-sectional data, it is based on retrospective self-reporting. Moreover, it did not allow for a consideration of longer term behaviours. Longitudinal studies would help to uncover how older adults deal with such problems, as well as what factors contribute most to successful adaptation over time. Qualitative data collection would allow for direct questioning on how EPs have experienced the coping process. Moreover, this methodology would allow for specific questions that focus on the emotional coping that has taken place, such as with the use of emotion-focused coping strategies.

Finally, in order to better understand how older adults come to manage with their eye problems, future research needs to consider including an extensive list of coping strategies. Two examples of such lists are available but only one is specific to vision problems. First, Lazarus and Folkman (1984) have developed a "Ways of

Coping” list. Respondents are asked to indicate whether a specific way to cope is something that is not used, somewhat used, used quite a bit, or used a great deal. For example, one of the ways of coping is “Talked to someone to find out more about the situation”. One of the strengths of this list is the inclusion of both emotion-focused, and problem-focused coping strategies. However, it is limited in that it does not specifically address coping with vision loss.

In comparison, Horowitz and colleagues (1994) have used a scale developed by the Elderly Care Research Center (ECRC) in order to index the variety of coping strategies that are used deal with vision loss. “Respondents were asked whether or not they were likely to use each of 22 coping strategies in dealing with their vision loss, a specific problem situation” (Horowitz et al., 1994, p.15). The items include a wide range of strategies such as seeking out information from others, expecting the worse, and altering activities. In general, it is perceived that these sorts of lists are effective to use, as they serve to cue respondents as to the range of strategies that they currently use, or that they have used in the past when dealing specifically with their eye problems. In addition, differences in coping may emerge when a larger number of coping strategies are examined.

Limitations of This Research

Upon reviewing the current research, there are a number of limitations that exist. First, it should be noted that this research is limited in terms of its sample. The relatively small sample size not only restricted the types of analyses that were

conducted, but it also limits the generalization of any findings. In addition, the sample represents the “survivors” of the original study. These individuals were more likely to be in better health and less functionally disabled than those original participants who were lost to the follow-up. Referring specifically to the EP sample, generalizability is limited as a small sample size would not allow for certain controls to be taken. With a larger sample size, it may have been possible to have controlled for such factors as eye condition/disease, and length of time with eye problems(s). In light of these points, generalizations must be made cautiously.

Another weakness centers around the data set that was used, as it was relatively general in nature. An interview schedule designed specifically to explore vision loss would possibly lead to more accurate findings, and would allow for more detailed questions which focus solely on eye problems. Moreover, the use of this data set does not allow us to answer certain research questions such as “What factors contribute to more successful long-term adaptation to vision loss in later life?”

Finally, there are numerous limitations that relate to the current investigator’s “...lack of control over the content of the data” (Black, 1995). As secondary data analyses involve data gathered by another for different purposes, some of the questions were not worded the way the current researcher would have preferred, or were simply not included. For example, although the ADL/IADL activities give a good indication of respondent’s functional limitations, it does not allow for an understanding of how many of these activities are directly affected by vision loss. Moreover, the absence of key variables such as name of eye condition/disease, and

severity of the eye problems is noticeable, as it may be that these factors influence how EPs cope with their eye problems.

Implications for Older Adults with Eye Problems and Rehabilitation Professionals

Notwithstanding the recognized limitations of the research, this study has provided some information that may be helpful to those older adults who are living with eye problems, or those individuals who try to help them. First, as EPs are diverse in nature, it is both necessary and appropriate to further explore their differences across such factors as eye condition/disease, and severity, so that interventions and services can be planned for, and provided accordingly. Second, the finding that appraisals are important predictors of the use of certain coping strategies suggests that the way in which respondents perceive their situation is predictive of the types of actions they take. In other words, respondents evaluate their situation, and decide whether they can treat the condition themselves, or should seek professional care.

Finally, research findings suggest that in general, older adults with vision loss have access to many of the same coping resources when compared to those without such problems. This is important for professionals to emphasize, as it suggests that generally, EPs are not any worse off than NEPs when it comes to the coping resources that they possess. Although the current research may not have uncovered the direct or indirect influence that coping resources have on coping strategies, it may still be that coping resources at one time or another will assist an older adult in dealing with their eye problems.

Chapter Summary

This final chapter highlighted the major findings of the three research questions, while drawing comparisons based on the literature. This was followed by a consideration of the conceptual framework that was used to guide this research. In addition, recommendations for future research were included, followed by the study's limitations. Next, the implications of the research findings for older adults who are adapting to eye problems, and for rehabilitation professionals who try to help them were considered.

REFERENCES

- Adams, D.L. (1969). Analysis of a life satisfaction index. Journal of Gerontology, 24, 470-474.
- Ainlay, S.C. (1988). Aging and new vision loss: Disruptions of the here and now. Journal of Social Issues, 44(1), 79-94.
- Ainlay, S.C. (1989). Day brought back my night: Aging and new vision loss. New York, NY: Routledge.
- Arfken, C.L., Lach, H.W., McGee, S., Birge, S.J., & Miller, J.B. (1994). Visual acuity, visual disabilities and falling in the elderly. Journal of Aging and Health, 6(1), 38-50.
- Bendel, R., & Afifi, A. (1977). Comparison of stopping rules in forward regression. Journal of the American Statistical Association, 72(357), 46-53.
- Black, C. (1995). Using existing data sets to study aging and the elderly: An introduction. Canadian Journal on Aging, 14(1), 135-150.
- 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. The Gerontologist, 29(3), 359-365.
- Braus, P. (1995). Vision in an aging America. American Demographics, 17(6), 34-38.
- Breytspraak, L. (1984). The development of the self in later life. Boston, MA: Little, Brown and Company.
- Burack-Weiss, A. (1991). In their own words: Elders' reactions to vision loss. Journal of Gerontological Social Work, 17(3), 15-23.
- Centre on Aging, University of Manitoba. (1996). Manitoba Fact Book on Aging. Winnipeg, MB: Centre on Aging, University of Manitoba.
- Chappell, N.L., & Strain, L.A. (1987). Decision-making by the elderly and the use of health care services (Final Report). National Health Research Development Program (NHRDP), Health and Welfare Canada.
- Cherry, K.E., Keller, M.J., & Dudley, W.N. (1991). A needs assessment of persons with visual impairments: Implications for older adults and service providers. Journal of Gerontological Social Work, 17(3), 99-123.

- Crews, J.E. (1991). Introduction. In N. Ringgold, Out of the corner of my eye: Living with vision loss in later life (pp.ix-xvi). New York, NY: American Foundation for the Blind.
- Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. Psychometrika, 16, 297-334.
- Davis, C., Lovie-Kitchin, J., & Thompson, B. (1995). Psychosocial adjustment to age-related macular degeneration. Journal of Visual Impairment and Blindness, 89(1-2), 16-27.
- Dodds, E., Ferguson, L.N., Hawes, G., & Yates, L. (1994). The concept of adjustment: A structural model. Journal of Visual Impairment and Blindness, 88(6), 487-497.
- Duke University for the Study of Aging and Human Development. (1978). Multidimensional functional assessment: The OARS methodology, Durham, NC: Duke University.
- Eagly, A.H. (1967). Involvement as a determinant of response to favourable and unfavourable information. Journal of Personality and Social Psychology, 7(3), 1-15.
- Edwardson, S.R., Dean, K.J., & Brauer, D.J. (1995). Symptom consultation in lay networks in an elderly population. Journal of Aging and Health, 7(3), 402-416.
- Emerson, D.L. (1981). Facing loss of vision: The response of adults to visual impairment. Journal of Visual Impairment and Blindness, 75(2), 41-45.
- Erber, N.P., & Osborn, R.R. (1994). Perception of facial cues by adults with low vision. Journal of Visual Impairment and Blindness, 88(3-4), 171-175.
- Felton, B.J., & Revenson, T.A. (1984). Coping with chronic illness. A study of illness controllability and the influence of coping strategies on psychological adjustment. Journal of Consulting and Clinical Psychology, 52(3), 343-353.
- Felton, B.J., & Revenson, T.A. (1987). Age differences in coping with chronic illness. Psychology and Aging, 2(2), 164-170.
- Flax, M.E., Golembiewski, P.J., & McCaully, B.L. (1993). Coping with low vision. San Diego, CA: Singular Publishing Group, Inc.
- Freidson, E. (1961). Patients' views of medical practice. New York, NY: Russell Sage Foundation.

- Galler, E.H. (1981). A long-term support group for elderly people with low vision. Journal of Visual Impairment and Blindness, 75(4), 173-176.
- Gee, E.M., & Kimball, M.M. (1987). Women and aging. Toronto, ON: Butterworths.
- Genensky, S.M., Berry, S.H., Bikson, T.H., & Bikson, T.K. (1979). Visual environmental adaptation problems of the partially sighted: Final Report. Santa Monica, CA: Center for the Partially Sighted.
- Genensky, S.M., & Zarit, S.H. (1993). Low-vision care in a clinical setting. In A.A. Rosenbloom, & M.W. Morgan (Eds.), Vision and Aging (2nd ed.) (pp.424-444). Stoneham, MA: Butterworth-Heinemann.
- Harger, E. (1994). Finally, a doctor who said: "Let's do something!". Perspective on Aging, 23(2), 6-9.
- Heinemann, A.W., Colorez, A., Frank, S., & Taylor, D. (1988). Leisure activity participation of elderly individuals with low vision. The Gerontologist, 28(2), 181-184.
- Hickey, A.A. (1986). An introduction to statistical techniques for social research. New York, NY: Random House.
- Hopkins, K.D., Glass, G.V., & Hopkins, B.R. (1987). Basic statistics for the behavioral sciences. Englewood Cliffs, NJ: Prentice-Hall.
- Horowitz, A. (1994). Vision impairment and functional disability among nursing home residents. The Gerontologist, 34(3), 316-323.
- Horowitz, A., Balistreri, E., Stuen, C., & Fangmeier, R. (1995). Visual impairment and rehabilitation needs of nursing home residents. Journal of Visual Impairment and Blindness, 89(1-2), 7-15.
- Horowitz, A., Reinhardt, J.P., McInerney, R., & Balistreri, E. (1994). Age-related vision loss: Factors associated with adaptation to chronic impairment over time. Final Report submitted to AARP-Andrus Foundation. New York, NY: Lighthouse Research Institute.
- Katz, S., Ford, A.B., Moskowitz, R.W., Jackson, B.A., & Jaffe, M.W. (1963). Studies of illness in the aged. The index of ADL: A standardized measure of biological and psychological function. Journal of the American Medical Association, 185, 94.

- Kinderknecht, C.H., & Garner, J.D. (1993). Living productively with sensory loss. Journal of Women and Aging, 5(3-4), 155-180.
- Klecka, W.R. (1975). Discriminant Analysis. In N.H. Nie, C. Hadlai Hull, J.G. Jenkins, K. Steinbrenner, & D.H. Bent (Eds.), Statistical Package for the Social Sciences (2nd ed.) (pp.434 - 467). New York, NY: McGraw-Hill.
- Klein, R. (1991). Age-related eye disease, visual impairment, and driving in the elderly. Human Factors, 33(5), 521-525.
- Kleinschmidt, J.J. (1995). The impact of vision loss in the elderly. New York, NY: Garland Publishing.
- Laforge, R.G., Spector, W.D., & Sternberg, J. (1992). The relationship of vision and hearing impairment to one-year mortality and functional decline. Journal of Aging and Health, 4(1), 126-148.
- Lau, R.R., & Ware, J.F. (1981). Refinements in the measurement of health-specific locus-of-control beliefs. Medical Care, 19(2), 1147-1158.
- Lazarus, R.S., & Folkman, S. (1984). Stress, appraisal, and coping. New York, NY: Springer Publishing Company.
- Luxton, L. (1988). Visual impairments in the elderly: A composite look. Pride Institute Journal of Long Term Home Health Care, 7(1), 3-9.
- Manitoba Department of Health and Social Development. (1973). Aging in Manitoba: Needs and resources 1971, Vols. I, IX-A. Winnipeg, MB: Manitoba Department of Health and Social Development, Division of Research, Planning and Program Development.
- Mann, W.C., Hurren, D., Karuza, J., & Bentley, D.W. (1993). Needs of home-based older visually impaired persons for assistive devices. Journal of Visual Impairment & Blindness, 87(4), 106-110.
- Marx, M.S., Werner, P., Cohen-Mansfield, J.C., & Feldman, R. (1992). The relationship between low vision and performance of activities of daily living in nursing home residents. Journal of the American Geriatrics Society, 40(10), 1018-1020.
- McCulloh, K.J., Crawford, I., & Resnick, J.D. (1994). A structured support group for midlife and older adults with vision loss. Journal of Visual Impairment & Blindness, 88(3-4), 152-159.

- Mickey, J., & Greenland, S. (1989). A study of the impact of confounder-selection criteria on effect estimation. American Journal of Epidemiology, 129, 125-137.
- Moos, R.H., & Schaefer, J.A. (1984). The crisis of physical illness: An overview and conceptual approach. In R.H. Moos (Ed.), Coping with physical illness 2: New perspectives. New York, NY: Plenum Medical Book Company.
- Morse, A.R., & Friedman, D. (1986). Vision rehabilitation and aging. Journal of Visual Impairment and Blindness, 80(6), 803-804.
- Morse, A.R., Silberman, R., & Trief, E. (1987). Aging and visual impairment. Journal of Visual Impairment and Blindness, 81(7), 308-312.
- Naeyaert, K.M., & Grace, G. (1990). Prevalence and causes of blindness and visual impairment in Canada. Journal of Visual Impairment and Blindness, 83(10), 361-363.
- National Advisory Council on Aging. (1990). Living with Sensory Loss: Vision (Cat. No. H71-2/1-8-1990E). Ottawa, ON: Minister of Supply and Services Canada.
- Nelson, K.A. (1987). Visual impairment among elderly Americans: Statistics in transition. Journal of Visual Impairment and Blindness, 81(9), 331-334.
- Neugarten, B.L., Havighurst, R.J., & Tobin, S.S. (1961). The measurement of life satisfaction. Journal of Gerontology, 16, 134-143.
- Norland, J.A. (1994). Profile of Canada's Seniors (Catalogue No. 96-312E). Ottawa, ON: Statistics Canada, Minister of Industry Science and Technology and Prentice Hall Canada Inc.
- Norusis, M.J. (1993). SPSS for Windows: Advanced Statistics User's Guide Release 6.0. Chicago: SPSS Inc.
- Norusis, M.J. (1994). SPSS for Windows: Professional Statistics Release 6.1. Chicago: SPSS Inc.
- Orr, A.L. (1991). The psychological aspects of aging and vision loss. Journal of Gerontological Social Work, 17(3-4), 1-14.
- Pearlin, L.I., Aneshensel, C.S., Mullan, J.T., & Whitlatch, C.J. (1996). Caregiving and its social support. In R.H. Binstock & L.K. George (Eds.), Handbook of aging and the social sciences (4th ed.) (pp. 283-302). New York, NY: Academic Press.

- Reinhardt, J.P. (1996). The importance of friendship and family support in adaptation to chronic vision impairment. Journal of Gerontology: Psychological Sciences, 51B(5), P268-P278.
- Ringgold, N. (1991). Out of the corner of my eye: Living with vision loss in later life. New York, NY: American Foundation for the Blind.
- Rosenberg, M. (1965). Society and the adolescent self-image. Princeton, NJ: Princeton University Press.
- Rutman, D.L., & Freedman, J.L. (1988). Anticipating relocation: Coping strategies and the meaning of home for older people. Canadian Journal on Aging, 7(1), 17-31.
- Salive, M.E., Guralnik, J., Glynn, R.J., Christen, W., Wallace, R.B., & Ostfeld, A.M. (1994). Association of visual impairment with mobility and physical function. Journal of the American Geriatrics Society, 42(3), 287-292.
- Salvage, A.V. (1995). The effects of vision loss in old age. Reviews in Clinical Gerontology, 5(5), 95-102.
- Scott, R.A. (1969). The making of blind men. New York, NY: Russell Sage Foundation.
- Segall, A. (1983). Interview schedule, 1983 Winnipeg Area Study. Winnipeg, MB: Department of Sociology, University of Manitoba.
- Sekuler, R. (1991). Why does vision change with age? Geriatrics, 46(4), 96-100
- Shanas, E., Townsend, P., Wedderburn, D., Friis, H., Milhoj, P., & Stehouwer, J. (1968). Old people in three industrial societies. New York, NY: Atherton Press.
- Sherer, M., & Maddux, J. (1982). The self-efficacy scale: Construction and validation. Psychological Reports, 51(2), 663-671.
- Silverstone, B.M. (1993). Beyond the boundaries of normal aging: The case of age-related vision loss. The Gerontologist, 33(4), 566-567.
- Statistics Canada. (1995). National Population Health Survey, Public Use Data File. [On-line] Available: <http://www.statcan.ca/english/Pgddb/People/Families/famil05.htm>.

- Strain, L.A. (1988). Physician utilization and illness behavior in old age: Prediction and process. Unpublished doctoral dissertation, University of Toronto, Toronto.
- Stuen, C. (1991). Awareness of resources for visually impaired older adults among the aging network. Journal of Gerontological Social Work, *17*(3-4), 165-179.
- Sullivan, N. (1983). Vision in the elderly. Journal of Gerontological Nursing, *9*(4), 228-235.
- Sweiden, J., & Strain, L.A. (1995). Chronic illness and disability in later life: Methodology. (Tech. Rep) Winnipeg, MB: University of Manitoba: Centre on Aging.
- Taylor, M.G. (1987). The Canadian health-care system: After medicare. In D. Coburn, C. D'Arcy, G.M. Torrance, & P. New (Eds.), Health and Canadian Society: Sociological Perspectives (2nd ed.) (pp. 73-101). Markham, ON: Fitzhenry and Whiteside.
- Thompson, P., Goldhaber, J., Amaral, P., & Ringering, L. (1992). Psychological strategies for assisting older adults who are partially sighted. Journal of Visual Impairment and Blindness, *86*(1), 78-80.
- Tobin, D.L., Holroyd, K.A., Reynolds, R.V., & Wigal, J.K. (1989). The hierarchical factor structure of the coping strategies inventory. Cognitive Therapy and Research, *13*(4), 343-361.
- U.S. National Office of Vital Statistics. (1957). Mortality from selected causes by age, race and sex, U.S. 1955. Vital Statistics Special Reports (National Summary 46,5).
- Wallston, B.S., Wallston, K.A., Kaplan, G.D., & Maides, S.A. (1976). Development and validation of the health locus of control (HLC) scale. Journal of Consulting and Clinical Psychology, *44*(4), 580-585.
- Ward, R.A. (1977). The impact of subjective age and stigma on older persons. Journal of Gerontology, *32*, 227-232.
- Warnke, J.W. (1991). The role of the family in the adjustment to blindness or visual impairment. In S.L. Greenblatt (Ed.), Meeting the needs of people with vision loss: A multidisciplinary perspective (pp. 37-45). Lexington, MA: Resources for Rehabilitation.
- Weinstock, F.J. (1987). Vision in the 1980s: A bright outlook for senior citizens. Journal of Visual Impairment and Blindness, *81*(7), 313-316.

- Weisse, F.A. (1989). Self-help groups for people with vision loss. In S.L. Greenblatt (Ed.), Providing Services for people with vision loss: A multidisciplinary perspective (pp. 84-97). Lexington, MA: Resources for Rehabilitation.
- Wood, V., Wylie, M.L., & Sheafor, B. (1969). An analysis of a short self-report measure of life satisfaction: Correlation with rater judgments. Journal of Gerontology, 24(4), 465-469.

APPENDIX A: VARIABLES USED IN THE STUDY

SOCIO-DEMOGRAPHIC CHARACTERISTICS			
Variable	Question	Coding	Level of Measurement
Age	Date of Birth	Years - continuous	Ratio
Gender	Sex of Respondent	0 - Male 1 - Female	Nominal

COPING RESOURCES			
Variable	Question	Coding	Level of Measurement
Health Status			
Self-assessed Health Status	Overall, would you say, in general your health is..	1 - Excellent 2 - Good 3 - Fair 4 - Poor 5 - Bad	Ordinal
Chronic Health Problems	See Appendix F for individual chronic health problems.	For each problem: Does not have (0) Has (1)	Dichotomous Ratio when summed
Number of ADL/IADL Limitations	See Table 5 for individual ADL and IADL items.	(Recorded) 0-No help required 1-Needs at least some help	Dichotomous Ratio when summed
Psychological Resources			
Life-satisfaction	See Appendix B for individual items.	0 - Disagree 1 - Undecided 2 - Agree	Ratio when items summed
Perceived Control Over Health	How much control do you think you have over your health?	1 - None 2 - Some 3 - A great deal	Ordinal
Health Locus of Control (External, Internal, and Medical Skepticism)	See Appendix E for individual items.	0 - Strongly agree 1 - Agree 2 - Disagree 3 - Strongly Disagree	Ratio when items summed
Self-esteem	See Appendix C for individual items.	0 - Strongly agree 1 - Agree 2 - Disagree 3 - Strongly disagree	Ratio when items summed
Self-efficacy	See Appendix D for individual items.	0 - Strongly agree 1 - Agree 2 - Disagree 3 - Strongly disagree	Ratio when items summed

Appendix A continued

COPING RESOURCES			
Variable	Question	Coding	Level of Measurement
Social Resources			
Marital Status	What is your marital status?	1 - Never Married 2 - Married 3 - Divorced/ Separated 4 - Widowed	Nominal
Living Arrangements	How many people, if any, live here with you?	0 - Lives alone 1 - Lives with one or more others	Nominal
Size of Family Network	How many (parents, brothers, sisters, sons, daughters) do you have?	Continuous	Ratio when summed
Number of Family Network Members Seen at Least Weekly	Of your (father, mother, brothers, sisters, sons, daughters), how many do you have contact with? (every day/once a week or more)	Sum of those family members seen at least weekly	Ratio when summed
Number of Confidants	Do you receive emotional support from anyone? That is, do you have someone who you confide in, talk to about yourself, your concerns, etc.? (If Yes) How many?	Number of confidants (continuous)	Ratio
Number of Friends	Other than relatives, how many people do you have at least weekly contact with?	Number of friends (continuous)	Ratio
Perceived Instrumental Support	If you were not feeling well, for whatever reason, who, if anyone would get groceries, essentials, etc., for you?" Other areas include house-cleaning, meal preparation, getting to the doctor/hospital, and who if anyone would get called in an emergency, or if information was needed about health matters?	0 - No one 1 - At least one person	Ratio when the six items summed

Appendix A continued

COPING RESOURCES			
Variable	Question	Coding	Level of Measurement
Material Resources			
Monthly Household Income	What is the total average monthly income for your household?	Dollars - continuous	Ratio
Perceived Adequacy of Household Income	How do you think your household income and assets currently satisfy your needs?	1 - Very well 2 - Adequately 3 - With some difficulty 4 - Not very well 5 - Totally inadequate	Ordinal
Education	How many years of schooling do you have?	Years - continuous	Ratio

Appendix A continued

APPRAISALS			
Variable	Question	Coding	Level of Measurement
Perceived Cause(s)	What in your opinion, caused this problem?	Do Not Know Cause Advancing Age Eye - Related Hereditary/Genetic Environmental Factors Other Health Conditions Medical Error	Nominal
Perceived Symptom(s)	What are the specific symptoms of this problem?	Poor Vision Eye Irritations Headaches/Dizziness	Nominal
Length of Time With Eye Problem(s)	How long ago did you first notice this problem?	Years - continuous	Ratio
Amount of Interference	How much do the symptoms interfere with your day to day living?	1 - Not at all 2 - Some 3 - A great deal	Ordinal
Amount of Bother	How much does it bother you that the symptoms are present?	1 - Not at all 2 - Some 3 - A great deal	Ordinal
COPING STRATEGIES			
Variable	Question	Coding	Level of Measurement
Coping Strategies	What actions, if any, do you take to deal with this problem?	Doctor Visits/Surgery Medication Use Use of Special Equipment/Devices Lifestyle Adjustments	Nominal

APPENDIX B: LIFE SATISFACTION INDEX Z: FREQUENCIES AND RELIABILITIES¹

Statement	Disagree %	Not Sure %	Agree %	No Response %	Alpha if Item Deleted²
1. As I grow older, things seem better than I thought they would be.	33.5	9.0	*55.5	2.0	.71
2. I have gotten more of the breaks in life than most people I know.	43.7	6.1	*48.1	2.0	.73
3. This is the dreariest time of my life.	*73.9	1.5	22.5	2.0	.71
4. Most of the things I do are boring or monotonous.	*83.1	1.3	13.6	2.0	.72
5. As I look back on my life, I am fairly well satisfied.	7.9	1.0	*89.0	2.0	.72
6. I am just as happy as when I was younger.	32.0	2.6	*63.4	2.0	.70
7. I have made plans for things I'll be doing a month or a year from now.	52.4	0.0	*45.5	2.0	.73
8. The things I do are as interesting to me they ever were.	17.6	0.8	*79.5	2.0	.71
9. When I think back over my life, I didn't get most of the important things I wanted.	*55.2	2.8	39.9	2.0	.73
10. These are the best years of my life.	52.7	6.6	*38.6	2.0	.71
11. Compared to other people, I get down in the dumps too often.	*86.7	0.5	10.7	2.0	.72
12. I have gotten pretty much what I expected out of life.	16.4	5.1	*76.5	2.0	.72
13. In spite of what people say, the lot of the average person is getting worse, not better.	*33.8	13.6	50.6	2.0	.73

¹ Source: Wood, V., Wylie, M.L., & Sheafor, B. (1969). An analysis of a short self-report measure of life satisfaction: Correlation with rater judgments. *Journal of Gerontology*, 24(4), 465-469.

² Does not include missing values.

³ Cronbach's alpha for all items = .74 (n = 391) (NEP group = .71, EP group = .77)

*Denotes answer indicating satisfaction.

APPENDIX C: SELF-ESTEEM: FREQUENCIES AND RELIABILITIES¹

Statement	Strongly Agree %	Agree %	Disagree %	Strongly Disagree %	No Response %	Alpha if Deleted ²
1. I feel I am a person of worth, at least on an equal plane with others.	*11.0	84.1	1.0	0.5	3.3	.78
2. I feel that I have a number of good qualities.	*8.2	87.2	1.0	0.0	3.6	.79
3. All in all, I am inclined to feel that I am a failure.	0.0	3.6	75.2	*17.9	3.3	.77
4. I am able to do things as well as most other people.	*5.6	79.8	10.5	0.3	3.8	.79
5. I feel I do not have much to be proud of.	0.3	5.9	74.7	*15.6	3.6	.77
6. I take a positive attitude toward myself.	*7.4	84.9	4.1	0.0	3.6	.77
7. On the whole, I am satisfied with myself.	*5.1	84.7	6.1	0.0	4.1	.78
8. I wish I could have more respect for myself.	0.0	11.8	73.4	*9.0	5.9	.78
9. I certainly feel useless at times.	0.8	34.0	56.8	*4.9	3.6	.81
10. At times I think I am no good at all.	0.0	10.5	70.1	*16.1	3.3	.78

¹ Source: Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

² Does not include missing values.

³ Cronbach's alpha for all items = .80 (n = 391) (NEP group = .82, EP group = .74)

*Denotes answer indicating high self-esteem

APPENDIX D: SELF-EFFICACY: FREQUENCIES AND RELIABILITIES¹

Statement	Strongly Agree %	Agree %	Disagree %	Strongly Disagree %	No Response %	Alpha if Item Deleted ²
1. When I make plans, I am certain I can make them work.	*6.4	68.3	20.2	0.5	4.6	.83
2. One of my problems is that I cannot get down to work when I should.	0.5	35.0	56.8	*4.3	3.3	.83
3. If I can't do a job the first time, I keep trying until I can.	*5.1	77.5	12.3	0.3	4.9	.83
4. When I set important goals for myself, I rarely achieve them.	0.0	17.4	69.8	*4.6	8.2	.83
5. I give up on things before completing them.	0.0	13.8	76.0	*7.2	3.1	.82
6. I avoid facing difficulties.	0.3	26.1	65.2	*4.3	4.1	.82
7. If something looks too complicated, I will not even bother to try it.	0.8	44.5	46.8	*2.8	5.1	.82
8. When I have something unpleasant to do, I stick to it until I finish it.	*2.6	81.6	11.0	0.3	4.6	.83
9. When I decide to do something, I go right to work on it.	*3.3	67.8	25.1	0.5	3.3	.84
10. When trying to learn something new, I soon give up if I am not initially successful.	0.0	28.6	61.1	*1.5	8.7	.83
11. When unexpected problems occur, I don't handle them well.	0.5	23.5	65.7	*2.6	7.7	.83
12. I avoid trying to learn new things when they look too difficult for me.	1.0	43.2	48.8	*1.5	5.4	.82
13. Failure just makes me try harder.	*2.0	67.5	21.0	0.3	9.2	.83
14. I feel insecure about my ability to do things.	0.3	25.3	67.3	*2.3	4.9	.82
15. I am a self-reliant person.	*7.7	82.6	5.9	0.0	3.8	.83
16. I give up easily.	0.0	8.2	85.7	*2.3	3.8	.82
17. I do not seem capable of dealing with most problems that come up in life.	0.0	12.3	78.0	*5.6	4.1	.82

¹ Source: Sherer, M., & Maddux, J. (1982). The self-efficacy scale: Construction and validation. *Psychological Reports*, 51(2), 663-671.

² Does not include missing values.

³ Cronbach's alpha for all items = .84 (NEP group = .83, EP group = .84)

*Denotes answer indicating high self-efficacy

**APPENDIX E: HEALTH LOCUS OF CONTROL¹
FREQUENCIES, RELIABILITIES AND FACTORS**

External Health Locus of Control

Statement	Strongly Agree %	Agree %	Disagree %	Strongly Disagree %	Alpha if item Deleted ²
1. Getting well is often a matter of chance.	2.8	28.9	52.7	5.1	.61
7. People who never get sick are just plain lucky.	3.3	56.5	33.0	1.0	.55
11. Good health is largely a matter of good fortune.	3.1	46.8	40.7	1.3	.68
22. No matter what I do, if I am going to get sick, I will get sick. ³	0.5	46.5	42.7	2.0	--

¹ Source: Segall, A. (1983). *Interview schedule, 1983 Winnipeg area study*. Winnipeg, MB: Department of Sociology, University of Manitoba. drawing on the work of: Freidson, E. (1961). *Patients' views of medical practice*. New York, NY: Russell Sage Foundation; Lau, R.R., & Ware, J.F. (1981). Refinements in the measurement of health-specific locus-of-control beliefs. *Medical Care*, *19*(2), 1147-1158; and Wallston, B.S., Wallston, K.A., Kaplan, G.D., & Maides, S.A. (1976). Development and validation of the health locus of control (HLC) scale. *Journal of Consulting and Clinical Psychology*, *44*(4), 580-585.

² Does not include missing values.

³ This statement does not factor into the same factor as the other three, and is therefore deleted from the scale.

⁴ Responses of strongly agree indicate beliefs in external control/chance

⁵ Cronbach's alpha for all items = .70 (NEP group = .71, EP group = .68)

Appendix E continued

Internal Health Locus of Control

Statement	Strongly Agree %	Agree %	Disagree %	Strongly Disagree %	Alpha if Deleted¹
3. When I am sick, I try to find out all the details of what is being done to me. ²	7.9	65.2	23.0	0.3	--
4. People's ill health results from their own carelessness.	1.0	43.7	45.5	1.8	.56
13. People who take care of themselves stay healthy.	2.8	77.0	16.1	0.0	.51
17. Whenever I get sick it is because of something I've done or not done.	0.5	30.9	58.8	1.3	.42
19. When I feel ill, I know it is because I have not been getting the proper exercise or eating right.	0.0	31.5	59.1	1.3	.43

¹ Does not include missing values.

² This statement does not factor into the same factor as the other four, and is therefore deleted from the scale.

³ Responses of strongly agree indicate beliefs in internal health locus of control.

⁴ Cronbach's alpha for all items = .56 (NEP group = .56, EP group = .53)

Appendix E continued

Medical Skepticism

Statement	Strongly Agree %	Agree %	Disagree %	Strongly Disagree %	Alpha if item Deleted ¹
2. I have my doubts about some things doctors say they can do for you.	3.3	47.8	41.9	1.8	.53
5. I believe in trying out different doctors to find out which one I think will give me the best care.	1.5	20.5	67.8	6.6	.54
6. If you wait long enough, you can get over most sicknesses without going to the doctor. ²	1.5	30.2	53.5	7.2	--
9. Some home prescribed remedies are still better than prescribed drugs for curing sicknesses.	4.1	49.1	35.5	2.0	.48
10. A person understands his/her own state of health better than most doctors.	1.8	49.1	41.4	1.5	.47
12. Doctors often tell you there's nothing wrong with you, when you know there is.	0.5	36.1	52.7	1.0	.50

¹ Does not include missing values.

² This statement does not factor into the same factor as the other five, and is therefore deleted from the scale.

³ Responses of strongly agree suggest higher levels of medical skepticism.

⁴ Cronbach's alpha for all items = .56 (NEP group = .56, EP group = .57)

Appendix E continued**Principal Components Analysis of Health Locus of Control**

Item	Communality
1	.58
2	.48
3	.78
4	.44
5	.37
6	.65
7	.65
9	.37
10	.54
11	.68
12	.49
13	.43
17	.60
19	.60
22	.60

Factor	Eigenvalue	Percentage of Variance	Cumulative Percent
1	2.89	19.2	19.2
2	1.74	11.6	30.8
3	1.44	9.6	40.4
4	1.15	7.7	48.1
5	1.05	7.0	55.1

Appendix E continued

Correlation Matrix of Single Items¹

Item	1	7	11	22	3	4	13	17	19	2	5	6	9	10	12
1	1.00														
7	.38	1.00													
11	.41	.55	1.00												
22	.19	.13	.25	1.00											
3	-.11	-.05	-.17	-.01	1.00										
4	-.01	.04	.08	-.02	-.06	1.00									
13	.10	.10	.05	-.03	.04	.09	1.00								
17	.27	.14	.12	.05	-.07	.16	.11	1.00							
19	.09	.01	.03	.01	.17	.23	.26	.42	1.00						
2	.09	.09	.07	-.02	.08	.05	.06	.06	.04	1.00					
5	.10	.13	.22	.03	.15	.16	.08	.08	.11	.18	1.00				
6	.05	.02	.16	.19	-.07	.07	-.07	.10	-.06	.03	.17	1.00			
9	.14	.11	.11	.08	.04	.08	.19	.14	.18	.15	.17	.05	1.00		
10	.08	.15	.24	.05	.09	.04	.03	.11	.10	.27	.21	.23	.30	1.00	
12	.07	.13	.18	.05	-.08	.06	.00	.14	.08	.20	.19	.15	.21	.28	1.00

¹ The following items are expected to factor together:

- External health locus of control: Items 1, 7, 11, and 22
- Internal health locus of control: Items 3, 4, 13, 17, and 19
- Medical Skepticism: Items 2, 5, 6, 9, 10, and 12

Appendix E continued

Varimax Rotation of Health Locus of Control

<i>Measure</i>		Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
	<i>Item</i>					
External	7	.79	.15	-.02	-.06	-.02
	11	.76	.20	.01	.21	-.13
	1	.74	.02	.18	.01	-.01
Medical Skepticism	10	.10	.70	.03	.18	.07
	2	.05	.65	-.08	-.23	.04
	12	.05	.60	.12	.11	-.31
	9	.13	.49	.29	-.05	.13
	5	.10	.49	.17	.21	.23
Internal	19	-.01	.03	.74	-.04	.23
	17	.20	.09	.74	.07	-.07
	4	-.09	.12	.60	.09	-.22
	13	.18	.09	.48	-.33	.22
Medical Skepticism¹	6	-.05	.23	.01	.76	-.16
External¹	22	.35	-.13	.00	.63	.25
Internal¹	3	-.16	.16	.04	-.02	.85

¹This is the concept that the items was expected to factor into.

**APPENDIX F: HEALTH PROBLEMS OF EYE PROBLEM (EP) AND
NO EYE PROBLEM (NEP) GROUPS**

<i>Health Problem</i>	<i>EPs with Problem % (n = 126)</i>	<i>NEPs with Problem % (n = 265)</i>	<i>Total Sample with Problem % (n = 391)</i>
Heart Trouble	31.7	21.5	24.8
Stroke	9.5	6.0	7.2
High Blood Pressure	34.9	30.9	32.2
Other Circulation Problems	16.7	11.7	13.3
Kidney Trouble	4.0	3.8	3.8
Cancer	5.6	7.9	7.2
Diabetes	11.1	5.3	7.2
Breathing Problems	14.3	14.7	14.6
Palsy	—	0.4	0.3
Thyroid Trouble	7.9	6.4	6.9
Stomach Trouble	31.7	21.5	24.8
Dental Problems	16.7	10.6	12.5
Emotional or Mental Health Problems	15.9	6.0	9.2
Foot or Limb Problems	34.9	27.2	29.7
Skin Trouble	15.9	14.3	14.8
Arthritis	73.0	57.0	62.1
Eye Trouble	—	—	32.2
Ear Trouble	43.7	35.5	38.1
Incontinence	10.3	5.7	7.2
Other Bladder Problems	8.7	9.8	9.5
Osteoporosis	10.3	6.4	7.7
Fractures	12.7	6.4	8.4

**APPENDIX G: COMPARISONS USED TO DESCRIBE THE SITUATION OF
THE EYE PROBLEM GROUP (EP)¹**

**A) A Comparison of Do Not Know Cause and Know Cause of Eye Problem(s)
Groups by Age, and Gender²**

Variables		Do Not Know Cause %	Know Cause %
Age			
68 - 79	(n = 73)	46.6	53.4
80+	(n = 52)	63.5	36.5
$\chi^2 = 3.48$, d.f. = 1, ns; Phi = .17			
Gender			
Male	(n = 35)	51.4	48.6
Female	(n = 90)	54.4	45.6
$\chi^2 = .09$, d.f. = 1, ns; Phi = .03			

**B) A Comparison of Advancing Age is Cause and Advancing Age Not Cause of Eye
Problem(s), by Age, Gender²**

Variables		Advancing Age is Cause %	Advancing Age Not Cause %
Age			
68 - 79	(n = 73)	20.5	79.5
80+	(n = 52)	21.2	78.8
$\chi^2 = .01$, d.f. = 1, ns; Phi = .01			
Gender			
Male	(n = 35)	25.7	74.3
Female	(n = 90)	18.9	81.1
$\chi^2 = .71$, d.f. = 1, ns; Phi = -.08			

**C) A Comparison of No Symptoms and At Least One Symptom Groups, by Length of Time
with Eye Problem(s)²**

Variables		No Symptoms %	At Least One Symptom %
Length of Time With Eye Problem(s)			
0 - 3	(n = 67)	16.4	83.6
4+	(n = 58)	10.3	89.7
$\chi^2 = .98$ d.f. = 1, ns; Phi = -.09			

¹ In these tables the percentages are added horizontally and the comparisons are made vertically.

² If n does not equal 126 on an independent variable the remainder are missing values.

Appendix G continued¹

D) A Comparison of Poor Vision (Symptom) and No Poor Vision (Symptom) Groups by Age, Gender, Length of Time With Eye Problem(s), Amount of Interference, and Amount of Bother²

Variables		Poor Vision (Symptom) %	No Poor Vision (Symptom) %
Age			
68 - 79	(n = 73)	65.8	34.2
80+	(n = 52)	80.8	19.2
$\chi^2 = 3.40$, d.f. = 1, ns; Phi = .16			
Gender			
Male	(n = 35)	80.0	20.0
Female	(n = 90)	68.9	31.1
$\chi^2 = 1.54$, d.f. = 1, ns; Phi = -.11			
Length of Time With Eye Problem(s) (Years)			
0 - 3	(n = 67)	65.7	34.3
4+	(n = 58)	79.3	20.7
$\chi^2 = 2.87$, d.f. = 1, ns; Phi = .15			
Amount of Interference			
Not At All	(n = 81)	65.4	34.6
Some/A Great Deal	(n = 43)	86.0	14.0
$\chi^2 = 6.00$, d.f. = 1, p<.05; Phi = .22			
Amount of Bother			
Not At All	(n = 59)	59.3	40.7
Some/A Great Deal	(n = 62)	83.9	16.1
$\chi^2 = 9.02$, d.f. = 1, p<.01; Phi = .27			

¹ In this table the percentages are added horizontally and the comparisons are made vertically.

² If n does not equal 126 on an independent variable the remainder are missing values.

Appendix G continued¹

E) A Comparison of Eye Irritation (Symptom) and No Eye Irritation (Symptom) Groups by Age, Gender, Length of Time with Eye Problem(s), Amount of Interference, and Amount of Bother²

Variables		Eye Irritation (Symptom) %	No Eye Irritation (Symptom) %
Age			
68 - 79	(n = 73)	20.5	79.5
80+	(n = 52)	30.8	69.2
$\chi^2 = 1.70$, d.f. = 1, ns; Phi = .12			
Gender			
Male	(n = 35)	22.9	77.1
Female	(n = 90)	25.6	74.4
$\chi^2 = 0.10$, d.f. = 1, ns; Phi = .03			
Length of Time with Eye Problem(s) (Years)			
0 - 3	(n = 67)	26.9	73.1
4+	(n = 58)	22.4	77.6
$\chi^2 = .33$, d.f. = 1, ns; Phi = -.05			
Amount of Interference			
Not At All	(n = 81)	21.0	79.0
Some/A Great Deal	(n = 43)	32.6	67.4
$\chi^2 = 2.01$, d.f. = 1, ns; Phi = .13			
Amount of Bother			
Not At All	(n = 59)	20.3	79.7
Some/A Great Deal	(n = 62)	30.6	69.4
$\chi^2 = 1.69$, d.f. = 1, ns; Phi = .12			

¹ In this table the percentages are added horizontally and the comparisons are made vertically.

² If n does not equal 126 on an independent variable the remainder are missing values.

Appendix G continued¹F) A Comparison of Amount of Interference Groups by Amount of Bother, Age, Gender, the Length of Time With Eye Problem(s), and Number of Symptoms Reported²

Variables		Not At All (Amount of Interference) %	Some/A Great Deal (Amount of Interference) %
Amount of Bother			
Not at All	(n = 60)	95.0	5.0
Some/A Great Deal	(n = 62)	38.7	61.3
$\chi^2 = 43.3$, d.f. = 1, p<.001; Phi = .60			
Age			
68 - 79	(n = 73)	72.6	27.4
80+	(n = 52)	55.8	53.5
$\chi^2 = 3.81$, d.f. = 1, ns; Phi = .17			
Gender			
Male	(n = 34)	50.0	50.0
Female	(n = 91)	71.4	28.6
$\chi^2 = 5.04$, d.f. = 1, p<.05; Phi = -.20			
Length of Time With Eye Problem(s) (Years)			
0 - 3	(n = 66)	71.2	28.8
4+	(n = 59)	59.3	40.7
$\chi^2 = 1.95$, d.f. = 1, ns; Phi = .12			
Number of Symptoms Reported			
0	(n = 16)	100.0	0.0
1	(n = 90)	64.4	35.6
2+	(n = 18)	38.9	61.1
$\chi^2 = 14.07$, d.f. = 2, p<.001; Cramer's V = .34			

¹ In this table the percentages are added horizontally and the comparisons are made vertically.² If n does not equal 126 on an independent variable the remainder are missing values.

Appendix G continued¹

G) A Comparison of Amount of Bother Groups by Age, Gender, the Length of time With Eye Problem(s), the Amount of Interference, and the Number of Symptoms Reported²

Variables		Not At All (Amount of Bother) %	Some/A Great Deal (Amount of Bother) %
Age			
68 - 79	(n = 71)	52.1	47.9
80+	(n = 51)	45.1	54.9
$\chi^2 = .59, d.f. = 1, ns; \Phi = .07$			
Gender			
Male	(n = 32)	43.8	56.3
Female	(n = 90)	51.1	48.9
$\chi^2 = .51, d.f. = 1, ns; \Phi = -.06$			
Length of Time with Eye Problem(s) (Years)			
0 - 3	(n = 66)	45.5	54.5
4+	(n = 56)	53.6	46.4
$\chi^2 = .80, d.f. = 1, ns; \Phi = -.08$			
Number of Symptoms Reported³			
0	(n = 16)	93.8	6.3
1	(n = 87)	44.8	55.2
2+	(n = 18)	27.8	72.2
$\chi^2 = 16.67, d.f. = 2, p < .001; \text{Cramer's } V = .37$			

¹ In this table the percentages are added horizontally and the comparisons are made vertically.

² If n does not equal 126 on an independent variable the remainder are missing values.

³ There are less than 5 cases in one of the cells.

APPENDIX H: LOGISTIC REGRESSIONS: CORRELATES OF THE COPING STRATEGY DOCTOR VISITS/SURGERY & USE OF SPECIAL EQUIPMENT/DEVICES

A) Medical Skepticism Not Included (n = 104)

<i>Independent Variables</i>	<i>Step 1</i>			<i>Step 2</i>			<i>Step 3</i>		
	<i>B</i>	<i>Wald</i>	<i>R</i>	<i>B</i>	<i>Wald</i>	<i>R</i>	<i>B</i>	<i>Wald</i>	<i>R</i>
Constant	1.41	0.22	--	0.50	0.02	--	0.24	0.01	--
Socio-demographic Characteristics									
Age	-0.00	0.01	0.00	0.02	0.28	0.00	0.03	0.39	0.00
Gender	-0.20	0.15	0.00	-0.54	0.93	0.00	-0.03	0.00	0.00
Appraisals									
Eye Irritation				-0.92**	3.26	-0.10	-0.79*	2.16	-0.04
Amount of Interference				-1.42	7.98	-0.22	-1.22	5.21	-0.17
Coping Resources									
Self-esteem							0.48	0.90	0.00
Medical Skepticism				Medical Skepticism Not Included					
Confidants							-0.51	3.47	-0.12
	<i>-2LL = 122.94</i>			<i>-2LL = 109.26</i>			<i>-2LL = 104.71</i>		
	<i>Improvement $\chi^2 =$</i>			<i>Improvement $\chi^2 =$</i>			<i>Improvement $\chi^2 =$</i>		
	<i>0.17, d.f. = 2, ns</i>			<i>13.68, d.f. = 2, p<.01</i>			<i>4.54, d.f. = 2, ns</i>		

B) Self-esteem Not Included (n = 99)

<i>Independent Variables</i>	<i>Step 1</i>			<i>Step 2</i>			<i>Step 3</i>		
	<i>B</i>	<i>Wald</i>	<i>R</i>	<i>B</i>	<i>Wald</i>	<i>R</i>	<i>B</i>	<i>Wald</i>	<i>R</i>
Constant	2.02	0.40	--	1.36	0.17	--	1.66	0.22	--
Socio-demographic Characteristics									
Age	-0.01	0.07	0.00	0.01	0.06	0.00	0.01	0.03	0.00
Gender	-0.22	0.17	0.00	-0.50	0.74	0.00	0.12	0.03	0.00
Appraisals									
Eye Irritation				-0.94	3.27	-0.11	-1.10	3.83	-0.13
Amount of Interference				-1.19	5.38*	-0.17	-0.96	3.10	-0.10
Coping Resources									
Self-esteem				Self-esteem Not Included					
Medical Skepticism							0.88	2.80	0.09
Confidants							-0.57*	3.89	-0.14
	<i>-2LL = 113.75</i>			<i>-2LL = 103.28</i>			<i>-2LL = 95.92</i>		
	<i>Improvement $\chi^2 =$</i>			<i>Improvement $\chi^2 =$</i>			<i>Improvement $\chi^2 =$</i>		
	<i>0.26, d.f. = 2, ns</i>			<i>10.47, d.f. = 2, p<.01</i>			<i>7.36, d.f. = 2, p<.05</i>		

Appendix H continued

**Logistic Regressions: Correlates of the Coping Strategy
Doctor Visits/Surgery**

C) Confidants Not Included (n = 99)

<i>Independent Variables</i>	<i>Step 1</i>			<i>Step 2</i>			<i>Step 3</i>		
	<i>B</i>	<i>Wald</i>	<i>R</i>	<i>B</i>	<i>Wald</i>	<i>R</i>	<i>B</i>	<i>Wald</i>	<i>R</i>
Constant	2.02	0.40	--	1.36	0.17	--	-0.06	0.00	--
Socio-demographic Characteristics									
Age	-0.01	0.07	0.00	0.01	0.06	0.00	0.02	0.15	0.00
Gender	-0.22	0.17	0.00	-0.50	0.74	0.00	-0.39	0.44	0.00
Appraisals									
Eye Irritation				-0.94	3.27	-0.11	-1.00	3.32	-0.11
Amount of Interference				-1.19*	5.38	-0.17	-1.00	3.49	-0.12
Coping Resources									
Self-esteem							0.57	1.19	0.00
Medical Skepticism							0.94	3.34	0.11
Confidants				Confidants Not Included					
				-2LL = 103.28			-2LL = 98.98		
				Improvement $\chi^2 =$			Improvement $\chi^2 =$		
				0.26, d.f. = 2, ns			4.30, d.f. = 2, ns		

D) Coping Resources Entered Prior to Appraisals (n = 99)

<i>Independent Variables</i>	<i>Step 1</i>			<i>Step 2</i>			<i>Step 3</i>		
	<i>B</i>	<i>Wald</i>	<i>R</i>	<i>B</i>	<i>Wald</i>	<i>R</i>	<i>B</i>	<i>Wald</i>	<i>R</i>
Constant	2.02	0.40	--	0.91	0.07	--	0.88	0.06	--
Socio-demographic Characteristics									
Age	-0.01	0.07	0.00	0.00	0.00	0.00	0.01	0.07	0.00
Gender	-0.22	0.17	0.00	0.44	0.49	0.00	0.18	0.07	0.00
Coping Resources									
Self-esteem				0.98	3.80	0.13	0.63	1.38	0.00
Medical Skepticism				0.90	3.22	0.10	0.96	3.21	0.11
Confidants				-0.67*	5.38	-0.17	-0.60*	4.05	-0.14
Appraisals									
Eye Irritation							-1.00	3.07	-0.10
Amount of Interference							-0.83	2.18	-0.04
				-2LL = 100.96			-2LL = 94.53		
				Improvement $\chi^2 =$			Improvement $\chi^2 =$		
				0.26, d.f. = 2, ns			6.43, d.f. = 2, p<.05		

Appendix H continued

E) Amount of Interference and Amount of Bother Not Included (n = 100)

<i>Independent Variables</i>	<i>Step 1</i>			<i>Step 2</i>			<i>Step 3</i>		
	<i>B</i>	<i>Wald</i>	<i>R</i>	<i>B</i>	<i>Wald</i>	<i>R</i>	<i>B</i>	<i>Wald</i>	<i>R</i>
Constant	2.26	0.52	--	2.13	0.46	--	1.44	0.17	--
Socio-demographic Characteristics									
Age	-0.01	0.11	0.00	-0.01	0.03	0.00	-0.00	0.00	0.00
Gender	-0.26	0.24	0.00	-0.24	0.19	0.00	0.45	0.47	0.00
Appraisals									
Eye Irritation				-1.13*	5.19	-0.17	-1.14*	4.29	-0.15
Amount of Interference				Amount of Interference Not Included					
Amount of Bother				Amount of Bother Not Included					
Coping Resources									
Self-esteem							0.80	2.34	0.06
Medical Skepticism							1.05*	4.05	0.14
Confidants							-0.67*	5.17	-0.17
	-2LL = 114.23 Improvement χ^2 = 0.39, d.f. = 2, ns			-2LL = 109.12 Improvement χ^2 = 5.10, d.f. = 1, p<.05			-2LL = 96.86 Improvement χ^2 = 12.26, d.f. = 3, p<.01		

**Logistic Regressions: Correlates of the Coping Strategy
Use of Special Equipment/Devices**

F) Marital Status and Living Arrangements Not Included (n = 105)

<i>Independent Variables</i>	<i>Step 1</i>			<i>Step 2</i>			<i>Step 3</i>		
	<i>B</i>	<i>Wald</i>	<i>R</i>	<i>B</i>	<i>Wald</i>	<i>R</i>	<i>B</i>	<i>Wald</i>	<i>R</i>
Constant	-1.27	0.13	--	-0.75	0.04	--	-1.96	0.27	--
Socio-demographic Characteristics									
Age	-0.00	0.00	0.00	-0.02	0.14	0.00	-0.01	0.03	0.00
Gender	-0.43	0.59	0.00	-0.30	0.25	0.00	-0.26	0.19	0.00
Appraisals									
Eye Irritation				0.85	2.17	0.04	0.90	2.36	0.06
Amount of Interference				0.94	2.70	0.09	1.08	3.35	0.12
Coping Resources									
Perceived Control Over Health							1.29*	4.61	0.17
Living Arrangements				Living Arrangements Not Included					
Marital Status				Marital Status Not Included					
	-2LL = 92.42 Improvement χ^2 = 0.58, d.f. = 2, ns			-2LL = 86.78 Improvement χ^2 = 5.64, d.f. = 2, ns			-2LL = 82.30 Improvement χ^2 = 4.48, d.f. = 1, p<.05		