

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

**PSYCHOSOCIAL CORRELATES OF THE SHORT TERM COURSE OF  
MULTIPLE SCLEROSIS**

A thesis presented in partial fulfilment  
of the requirements for the degree  
of Doctor of Philosophy in Psychology  
at Massey University

**Sheryl Corinne Zika**

1996

## ABSTRACT

The present investigation developed and tested a theoretical model, which attempted to depict some of the complex relations among the psychosocial and physical health experiences of multiple sclerosis (MS) patients. The model is comprised of five constructs: psychological well-being, physical health status, stressors, disposition and social support. The pivotal aspect of the model is psychological well-being, through which all other factors exert their influence.

The study consisted of a cross-sectional and a longitudinal phase. Participants in the cross-sectional phase were a convenience sample of 45 people diagnosed with MS. The longitudinal phase involved a subsample of 12 people for an additional six months. In the cross-sectional phase, one structured interview was conducted at the participant's home. The longitudinal participants completed (six) monthly structured interviews and physical examinations (by a physician) at the rehabilitation unit of the local hospital.

Four strategies were used to analyze and interpret the data. Firstly, the cross-sectional data was analyzed using conventional between-subject regressions to examine aggregate relations at a single point in time. Secondly, the longitudinal data was analyzed using within-subject regressions to examine aggregate associations among changes in the variables. Thirdly, the longitudinal data was analyzed to examine intraindividual patterns. Lastly, a qualitative case study approach was used to interpret the factors preceding and following an exacerbation in one participant.

Results of the cross-sectional analysis revealed that disposition and stressors were both related to psychological well-being but, unexpectedly, physical health status and social support had no associations with well-being. Stressors demonstrated an association with physical health status, and disposition was related to social support. The within-subject regressions suggested that disposition and social support moderate how changes in stressors impact on changes in psychological well-being, and how changes in emotional states impact on changes in physical health status. An association was found between

stressors and physical health status. The intraindividual findings revealed that, in general, the variables within each major construct related to one another in line with conceptual expectations. When examining associations between constructs, aggregate findings, for the most part, could not be replicated at the individual level. The case study suggested that changes in stressors and psychological well-being precede and follow a relapse in the disease.

Overall, the findings provided mixed support for the theoretical model. However, the quantitative findings, in combination with contextual information and observational evidence, contributed valuable insights regarding the MS illness process. During relatively stable periods of the disease, in general, psychological functioning does not appear to influence physical functioning, or vice versa. Persons with MS appear to use denial and other defence mechanisms to help them cope with their illness. The appropriateness of the methodological approaches used are discussed, and some of the difficulties in conducting research with MS patients are highlighted. Finally, limitations of the present study are noted and suggestions are made for future research.

## ACKNOWLEDGEMENTS

I am grateful to my chief supervisor, Dr John Spicer, for his guidance throughout the various stages of this thesis. His excellent research skills assisted and extended my academic development, and his patience with my learning process was greatly appreciated. I would like to thank my second supervisor, Kerry Chamberlain, who also performed a major role in guiding the present investigation. In particular, his knowledge of the literature and his assistance in clarifying theoretical issues was highly valued. I would like to extend my gratitude to Dr Peter Disler for his medical advise during the planning of the study and his assistance during the data collection phase. He graciously gave of his time to conduct physical examinations and collect medical data.

Appreciation is given to Dr Monica Skinner for her helpful advise on formatting and her assistance with proof reading this document. I would like to thank Kathleen Newman for her excellent illustration of the theoretical model, Julia for her help with formatting graphs, and Ellie for her assistance with proof reading tables.

Thankfulness is extended to the Multiple Sclerosis Society for their assistance in locating participants for this study. I am grateful to the MS field officer, Shelley Smith, for her support and help with transportation during the data collection phase of this project.

My family has been a tremendous support throughout the years of this project. Shari, Danielle and Adam needed to make many sacrifices to allow me time to attend to my work. My husband Bill, through his understanding, support and practical assistance made the completion of this thesis possible. Encouragement from friends was also greatly appreciated.

Finally, I would like to warmly thank the many participants in this study who gave so much of themselves and their time to contribute to this investigation. There could not have been a study without their commitment and co-operation.

## TABLE OF CONTENTS

### CHAPTER 1: INTRODUCTION

Overview . . . . .	1
Medical aspects of multiple sclerosis . . . . .	3
The course of MS: Implications for research . . . . .	5
Psychological aspects of MS: The early literature . . . . .	6

### CHAPTER 2: PSYCHOSOCIAL ASPECTS OF MULTIPLE SCLEROSIS

Stress . . . . .	11
Psychological well-being . . . . .	16
Social support . . . . .	26
Disposition . . . . .	30
Summary and conclusions . . . . .	34

### CHAPTER 3: DEVELOPMENT OF THE THEORETICAL MODEL

Factors in the theoretical model . . . . .	38
Psychological well-being . . . . .	38
Stressors . . . . .	41
Disposition . . . . .	43
Dispositional optimism . . . . .	44
Meaning in life . . . . .	45
Locus of control and health locus of control . . . . .	47
Social Support . . . . .	49
Physical health status . . . . .	51
Relationships in the theoretical model . . . . .	53
Research aims, analytic strategies and their rationale . . . . .	56

### CHAPTER 4: METHOD

Participants . . . . .	59
Demographic information . . . . .	60

Procedure . . . . .	63
Measures . . . . .	64
Psychosocial measures . . . . .	66
Stressors . . . . .	66
Hassles . . . . .	66
Life events . . . . .	66
Disposition . . . . .	66
Meaning in life . . . . .	66
Locus of control . . . . .	68
Health locus of control . . . . .	68
Optimism . . . . .	69
Social support . . . . .	70
Perceived social support . . . . .	70
Sexual satisfaction . . . . .	71
Psychological well-being . . . . .	71
Hopelessness . . . . .	71
Depression and anxiety . . . . .	72
Positive and negative affect . . . . .	72
Life satisfaction . . . . .	73
Physical health status measures . . . . .	73
Disability (ADL) . . . . .	73
Physical symptoms . . . . .	74
Self-rated health change . . . . .	75
Physical examination measures . . . . .	75
Disability (FIM) . . . . .	75
Impairment and neurologic dysfunction . . . . .	76
Other-rated health change . . . . .	77
Screening measure . . . . .	77
Cognitive function . . . . .	77
Data analysis . . . . .	79
Ethical considerations . . . . .	82

## **CHAPTER 5: CROSS-SECTIONAL RESULTS: EXAMINING RELATIONSHIPS IN THE MODEL**

Univariate characteristics . . . . .	83
Bivariate analyses . . . . .	86
Interrelationships within constructs . . . . .	86
Associations between psychological well-being and other constructs . . . . .	89
Associations among physical health status, social support, stressor and psychological well-being variables . . . . .	92
Multiple regression analyses . . . . .	92
Determinants of psychological well-being . . . . .	93
Hopelessness . . . . .	94
Anxiety . . . . .	95
Depression . . . . .	97
Negative affect . . . . .	99
Positive affect . . . . .	101
Life satisfaction . . . . .	103
Summary . . . . .	105
Determinants of physical health status . . . . .	106
Determinants of social support . . . . .	107
Determinants of stressors . . . . .	108
Conclusion . . . . .	109

## **CHAPTER 6: LONGITUDINAL RESULTS: TESTING FOR CHANGE OVER TIME**

Univariate characteristics . . . . .	112
Bivariate analyses . . . . .	112
Interrelationships within constructs . . . . .	113
Associations between psychological well-being and other constructs in the model . . . . .	115
Associations among health status, social support, stressor and dispositional variables . . . . .	117



Within-subject multiple regression analyses . . . . .	119
Determinants of psychological well-being . . . . .	119
Hopelessness . . . . .	120
Life satisfaction . . . . .	123
Summary . . . . .	126
Determinants of health status . . . . .	126
Self-rated health change . . . . .	127
Disability (ADL) . . . . .	129
Impairment status . . . . .	131
Self-rated health change (2) . . . . .	134
Impairment status (2) . . . . .	136
Neurologic dysfunction (2) . . . . .	138
Summary . . . . .	140
Determinants of stressors . . . . .	140
Conclusion . . . . .	141

## **CHAPTER 7: INDIVIDUAL RESPONSE PATTERNS**

Single variable and construct patterns . . . . .	145
Stressor variables . . . . .	145
Stressor construct . . . . .	147
Psychological well-being variables . . . . .	148
Psychological well-being construct . . . . .	151
Physical health status variables . . . . .	154
Physical health status construct . . . . .	157
Summary . . . . .	160
Between construct patterns . . . . .	161
Determinants of psychological well-being . . . . .	162
Determinants of physical health status . . . . .	163
Determinants of stressors . . . . .	166
Summary . . . . .	168

## **CHAPTER 8: AN ILLUSTRATIVE CASE STUDY**

Personal and medical history . . . . .	171
Patterns from the data . . . . .	173
Physical health changes . . . . .	173
Changes in stressors . . . . .	174
Psychological changes . . . . .	176
Conclusion . . . . .	176

## **CHAPTER 9: DISCUSSION AND CONCLUSION**

Interpretation of cross-sectional findings . . . . .	178
Interpretation of within-subject aggregate findings . . . . .	183
Interpretation of intraindividual findings . . . . .	188
Discussion of the case study . . . . .	191
Conclusions regarding the theoretical model . . . . .	192
Methodological considerations . . . . .	198
Limitations of the study and suggestions for future research . . . . .	201

<b>REFERENCES . . . . .</b>	<b>205</b>
-----------------------------	------------

<b>APPENDIX A: Letters to participants . . . . .</b>	<b>226</b>
--	------------

<b>APPENDIX B: Participant consent forms . . . . .</b>	<b>230</b>
--	------------

<b>APPENDIX C: Questionnaires . . . . .</b>	<b>233</b>
---	------------

<b>APPENDIX D: Ethical considerations for study . . . . .</b>	<b>260</b>
---	------------

<b>APPENDIX E: Intercorrelation matrices . . . . .</b>	<b>263</b>
--	------------

<b>APPENDIX F: Cross-sectional regression summary tables predicting physical health status . . . . .</b>	<b>267</b>
--	------------

<b>APPENDIX G: Within-subject regression summary tables</b>	
predicting psychological well-being . . . . .	276
<b>APPENDIX H: Within-subject regression summary tables</b>	
predicting physical health status . . . . .	281
<b>APPENDIX I: Raw and Z-scores for individual cases . . . . .</b>	<b>292</b>
<b>APPENDIX J: Notes . . . . .</b>	<b>301</b>

## LIST OF FIGURES

Figure 1: Model relating psychosocial and physical factors in multiple sclerosis . . . . .	53
Figure 2: Model relating psychosocial and physical factors in multiple sclerosis . . . . .	84
Figure 3: Intraindividual changes in hassles and life events over seven months (case 2) . . . . .	147
Figure 4: Intraindividual changes in hassles and life events over seven months (case 8) . . . . .	148
Figure 5: Intraindividual changes in hopelessness, depression, anxiety and negative affect over seven months (case 1). . . . .	152
Figure 6: Intraindividual changes in hopelessness, depression, anxiety and negative affect over seven months (case 11) . . . . .	152
Figure 7: Intraindividual changes in positive affect and life satisfaction over seven months (case 5) . . . . .	153
Figure 8: Intraindividual changes in positive affect and life satisfaction over seven months (case 7) . . . . .	154
Figure 9: Intraindividual changes in symptom frequency, symptom intensity, self-rated health change and other-rated health change over seven months (case 1) . . . . .	158
Figure 10: Intraindividual changes in symptom frequency, symptom intensity, self-rated health change and other-rated health change over seven months (case 3) . . . . .	158
Figure 11: Intraindividual changes in disability (FIM), disability (ADL), neurologic dysfunction and impairment status over seven months (case 6) . . . . .	160
Figure 12: Intraindividual changes in hassles and hopelessness over seven months, for a person with an internal locus of control orientation (case 1) . . . . .	162

Figure 13: Intraindividual changes in hassles and life satisfaction over seven months, for a person with high meaning in life (case 5) . . . . .	163
Figure 14: Intraindividual changes in anxiety and impairment status over seven months, for a person with low meaning in life (case 6) . . . . .	165
Figure 15: Intraindividual changes in depression and self-rated health change over seven months, for a person with strong perceived social support (case 11) . . . . .	166
Figure 16: Intraindividual changes in self-rated health change and hassles over seven months (case 1) . . . . .	167
Figure 17: Intraindividual changes in self-rated health change and hassles over seven months (case 5) . . . . .	168

## LIST OF TABLES

Table 1: Demographic information about participants . . . . .	62
Table 2: Variables assessed and data collection times . . . . .	65
Table 3: Means and standard deviations of cross-sectional variables . . . . .	85
Table 4: Intercorrelations of dispositional variables . . . . .	87
Table 5: Intercorrelations of psychological well-being variables . . . . .	88
Table 6: Intercorrelations of physical health status variables . . . . .	89
Table 7: Correlations of psychological well-being variables with stressor, dispositional, social support and physical health status variables . . . . .	90
Table 8: Correlations of social support and stressor variables with physical health status and dispositional variables . . . . .	92
Table 9: Results for hopelessness regressed on stressors, disposition, social support and health status . . . . .	94
Table 10: Results for anxiety regressed on stressors, disposition, social support and health status . . . . .	96
Table 11: Results for depression regressed on stressors, disposition, social support and health status . . . . .	98
Table 12: Results for negative affect regressed on stressors, disposition, social support and health status . . . . .	100
Table 13: Results for positive affect regressed on stressors, disposition, social support and health status . . . . .	102
Table 14: Results for life satisfaction regressed on stressors, disposition, social support and health status . . . . .	104
Table 15: Variables present in the longitudinal analyses, type of score and number of assessments . . . . .	111

Table 16: Intercorrelations of psychological well-being variables . . . . .	113
Table 17: Intercorrelations of physical health status variables . . . . .	115
Table 18: Correlations of well-being variables with stressor, dispositional, social support and health status variables . . . . .	116
Table 19: Correlations of social support and stressor variables with health status and dispositional variables . . . . .	118
Table 20: Results for hopelessness regressed on stressors, disposition, social support, health status and time . . . . .	121
Table 21: Results for life satisfaction regressed on stressors, disposition, social support, health status and time . . . . .	124
Table 22: Results for self-rated health change regressed on well-being, disposition and time . . . . .	128
Table 23: Results for disability (ADL) regressed on well-being, disposition and time . . . . .	130
Table 24: Results for impairment status regressed on well-being, disposition and time . . . . .	132
Table 25: Results for self-rated health change regressed on well-being, social support and time . . . . .	135
Table 26: Results for impairment status regressed on well-being, social support and time . . . . .	137
Table 27: Results for neurologic dysfunction regressed on well-being, social support and time . . . . .	139
Table 28: Summary of significant within-subject multiple regression results . . . . .	142