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The Relevance of Depressive Symptoms and Social Support to Disability in Women with Multiple Sclerosis or Fibromyalgia

Lorraine J. Phillips, PhD, RN, FNP-BC [Assistant Professor] and
University of Missouri, S414 Sinclair School of Nursing, Columbia, MO 65211, Phone
573-882-0218, Fax 573-884-4544

Alexa K. Stuifbergen, PhD, RN, FAAN [Professor]
Dolores Sands Chair in Nursing Research, Associate Dean for Research, The University of Texas
at Austin, School of Nursing, 1700 Red River, Austin, TX 78701-1499

Lorraine J. Phillips: phillipslo@missouri.edu; Alexa K. Stuifbergen: astuifbergen@mail.utexas.edu

Abstract

Multiple sclerosis (MS) and fibromyalgia syndrome (FM) may spur substantial disability for those affected. Using structural equation modeling (SEM), this secondary analysis examined predictors of disability in women with MS (N=118) and FMS (N=197) recruited for separate wellness studies. Greater functional limitations, lower economic adequacy, less social support, and higher depressive symptoms predicted greater disability in both groups. The final multi-group model demonstrated good fit $\chi^2(111, N=315)=135.92$, CFI=.99, RMSEA=.03) and identified similarities and differences across groups.

Keywords

disability; structural equation modeling; women; multiple sclerosis; fibromyalgia syndrome; depression; social support

Introduction

As of 2004, 2.9% of people in the world were severely disabled and 12.4% moderately (long-term) disabled (World Health Organization, 2008). Disability prevalence rises with age; 15% of adults aged 15–59 years have moderate to severe disability whereas 46% of adults aged 60 and older do. The enormous impact of disability on working age and older adults testifies to the importance of reducing the prevalence of disability-associated health problems and the development of disability in persons already living with chronic conditions.

MS and FM, two chronic health conditions, can lead to substantial disability (Julian *et al.*, 2008; Al-Ailaf, 2007). MS affects only 2.5 million persons worldwide whereas FM is estimated to affect 2% of the general population (National Multiple Sclerosis Society, 2008; Wolfe *et al.*, 1995). Diagnosis of both MS and FM typically occurs in early adulthood, prime years for work and family obligations. MS and FM are more common in women than men, as is associated disability (Hart *et al.*, 2005; Weir *et al.*, 2006).

MS, a progressive autoimmune disease of the central nervous system, may compromise mobility, bowel and bladder function, speech, vision, energy, mood, and societal roles (Kurtzke, 1983). Such limitations in functioning may affect multiple aspects of life, from employment and standard of living to psychological well being, social activities, and quality of life (Hakim *et al.*, 2000; Janssens *et al.*, 2003; Phillips and Stuifbergen, 2006).

FM is a nonprogressive condition, without definitive pathophysiology or measurable indicators of disease activity (Mease, 2007). Defining features include widespread nonarticular musculoskeletal pain, tenderness on palpation in at least 11 of 18 designated tender points, and pain in all four quadrants of the body (Wolfe *et al.*, 1990). Most women with FM report limitations in basic physical activities, e.g., climbing stairs, lifting 10 pounds, and walking ½ mile (Jones *et al.*, 2008).

Treatment for MS and FM, both incurable, aims to manage symptoms and preserve functioning, and for MS, slow disease progression. Women having either condition experience a high rate of depression. The lifetime prevalence of depression in MS and FM is approximately 50% and 68%, respectively (Epstein *et al.*, 1999; Lynch *et al.*, 2001). Depressed persons may perceive disproportionate disability or experience symptoms that contribute to both depression and disability (Kassam and Patten, 2006; Smith and Young, 2000).

Whether and when a disease disables depends on disease and nondisease factors. Marriage, employment, education, and economic stability influenced self-reported functional limitations in women with MS (Clingerman *et al.*, 2004). Anxiety and depression have been associated with greater functional limitations, work disability, and activity-related discomfort (Janssens *et al.*, 2003; Kurtze *et al.*, 1999; Jones *et al.*, 2008). In both conditions, greater social support correlates with less depression and disability (Franks *et al.*, 2004; Mohr *et al.*, 2004).

Research indicates that disability in women with either condition depends on specific symptoms and unique individual characteristics. Better understanding of the relationships existing between physical and psychological factors and disability in women with MS or FM may help develop interventions to address those problems and arrest disablement. This study aimed to examine predictors of disability in women with MS or FM and to determine whether depression, social support, and economic adequacy mediated the effects of functional limitations on disability.

Theoretical Framework

Disablement frameworks have evolved since Nagi's (1965) seminal conceptualization of the sequence from disease or injury to disability (Jette, 2006; Masala and Petretto, 2008). The now predominant model, the International Classification of Functioning, Disability and Health (ICF) (World Health Organization, 2001), comprises another biopsychosocial model in which the balance between human functioning and disability is depicted as a dynamic interaction between health conditions and environmental and personal contextual factors. The ICF includes impairments, activity limitations and participation restrictions in defining disability. Reported difficulties in operationalizing activity and participation in accordance with ICF definitions (Jette, 2006) led us to the Disablement Process Model for this analysis (Verbrugge and Jette, 1994). Disablement proceeds along a main pathway from pathology (presence of disease or injury) to impairments (losses of mental, physical, or biochemical function in specific body systems), functional limitations (restrictions in basic physical and mental actions) and finally disability (difficulty in performing daily activities due to a health problem) implies sequential causal relationships. The trajectory from pathology to disability may be influenced positively or negatively by risk factors, intra-individual factors, and

extra-individual factors. Disability is not inherent but rather reflects the gap between a person's functional abilities and the demands of the social and physical environment (Parker and Wright, 1997).

Studies have identified a direct link between functional limitations and disability (Peek *et al.*, 2003; van Gool *et al.*, 2005) as well as risk factors that contribute to disability (e.g., age, gender, education, marital status) (Penninx *et al.*, 2000). The role of psychosocial variables as independent predictors of disability in older adults has been established (van Gool *et al.*, 2005; Koukoulis *et al.*, 2002), but we are aware of only two studies that examined the influence of psychosocial functioning on disablement in persons with chronic illness (van Genderen *et al.*, 2005; Strating *et al.*, 2007).

Research guided by the disablement model can provide a systematic understanding of factors affecting the trajectory from functional limitations to disability. Two-group SEM allowed us to test the conceptual ideas of the disablement model in two samples of women with distinct disabling conditions. In prior research, depression influenced one's perception of social support, thus a path was drawn from Depressive Symptoms to Social Support in the hypothesized model (see Figure 1).

Methods

Sample and Data

Nonprobability samples of women with MS and women with FM were originally recruited for two separate wellness intervention studies for women with chronic disabling conditions. Baseline data collection occurred from 1997–1998 for women with MS (Stuifbergen *et al.*, 2003) and from 2004–2006 for women with FM (Stuifbergen *et al.*, 2004). The university Institutional Review Board approved the parent study and this secondary analysis.

The final samples included 118 women with MS and 197 women with FM. Most women with FM were married (63.5%), Caucasian (81.7%), and had some college education (59.9%). Likewise, women with MS were primarily married (56.8%), Caucasian (81.4%), with some college education (62.8%). The demographics of the MS sample align with Minden *et al.*'s (1993) estimates of persons with MS in the U.S. Attentive recruitment of minority participants for the FM study resulted in 15.2% of participants being Spanish, Hispanic, or Latino and 3.6% being African American/Black. More women with FM were unemployed due to disability (22.3%) or retired (22.3%) than were women with MS (16.1% and 10.2%, respectively). Fifty percent of women with MS remained employed compared to 40.7% of women with FM.

Measures

Instruments for the present study represented five domains of the disablement process: (1) functional limitations, (2) disability, (3) risk factors, (4) intra-individual factors, and (5) extra-individual factors. Table 1 displays study abbreviations and Table 2 lists study variables with corresponding instruments and labels, as well as means, standard deviations (SD), and reliability estimates. Scoring for the Medical Outcomes Study 36-item Short Form Health Survey (SF-36) (Ware and Sherborne, 1992) requires recalibration to a 0 to 100 scale, wherein a higher value indicates better health status. To match other scales in the present study, scoring of the SF-36 scales was reversed.

Functional limitations—The latent variable Functional Limitations was estimated by scores on the Fibromyalgia Impact Questionnaire physical functioning (FIQ PF) subscale (Burkhardt *et al.*, 1991) and the SF-36 physical functioning (PF) scale for the FM sample,

and the Incapacity Status Scale (ISS) mobility subscale (Kurtzke, 1981) and the SF-36 PF scale for the MS sample. The FIQ PF subscale contains 10 items addressing large muscle activities; scores range from 0–10 with higher scores indicating poorer PF. Similarly, higher scores on the 5-item ISS mobility subscale indicate poorer functional mobility. The 10 items of the SF-36 PF scale ask to what extent one's health limits common physical activities.

Disability—The individual observed variables of the SF-36 Role Limitations due to Physical Health (Role-Physical, RP) and SF-36 Social Functioning (SF) scales represented disability. The SF-36 RP scale asks how much one's health limits work-related activities and the SF-36 SF scale asks both the time and the extent health limits social activities.

Risk factors—Age, education, and duration of illness were measured in years.

Intra-individual factors—The latent construct of Depressive Symptoms was estimated with the 10-item short form of the Center for Epidemiologic Studies Depression Scale (CESD-10) and the SF-36 Mental Health (SF-36 MH) scale (Andresen *et al.*, 1994; Radloff, 1977). The CESD-10 assesses self-reported symptoms of depression, yielding scores from 0 to 30. CESD-10 scores above 10 indicate probable depression. The 5-item SF-36 MH scale measures symptoms of depression and anxiety in the past week.

The latent construct of Social Support was estimated by three subscales derived from the Personal Resource Questionnaire 2000 (PRQ2000), a 15-item shortened version of the original 25-item Personal Resource Questionnaire (PRQ) (Weinert, 2003; Weinert and Brandt, 1987). Psychometric testing of the PRQ2000 yielded a three factor structure (Weinert). In this study, factor I was labeled Intimacy/Assistance, factor II was labeled Integration/Affirmation, and factor III was labeled Reciprocity. Higher scores reflect better social support.

Extra-individual factors—The Economic Adequacy Scale measured perceived adequacy of finances for everyday expenses (Lobo, personal communication, 1992). On a 4-point scale, items rate how adequately existing economic resources meet various financial obligations. Scores are an average of all answered items (maximum of 8 items); higher scores reflect better finances. The mean score was multiplied by eight (number of items) before statistical analysis to remedy an ill-scaled covariance matrix.

Data Analysis

Descriptive data analysis was performed with SPSS version 15.0 (SPSS, Inc. Chicago, IL). Tables 3 and 4 present bivariate correlations for each data set. No correlation exceeded ± 0.85 , the maximum value suggested for SEM analysis (Kline, 2005). Variables included in model testing were significantly correlated with the dependent variables (RP-disability and SF-disability). All observed variables met the assumption of univariate normality (West *et al.*, 1995).

Analysis of Moment Structures (Amos) version 7.0 (Arbuckle, 2006) was used for mixed-model SEM, a multivariate method including both latent and observed variables (McDonald and Ho, 2002). Model fit was evaluated with chi square (χ^2), comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), and Akaike Information Criterion (AIC) (Keith, 2005).

An initial measurement or confirmatory model was specified with the larger FM data set, then tested in the MS sample. Adjustments to the model were based on theoretical logic as well as fit statistics and modification indices yielded in the confirmatory model testing. Of note, Disability required respecification as the individual observed variables of SF-36 SF

and SF-36 RP because an inadmissible solution resulted when Disability was specified as a latent variable.

Disablement process theory and parameters generated during confirmatory model testing guided the specification of a structural model for the FM sample. The lack of significant paths between Social Support and both dependent variables prompted further testing of pathways supported by the literature (Chwastiak *et al.*, 2002). Reversing the path to go from Social Support to Depressive Symptoms generated a model that accommodated our purpose of testing mediation effects. A direct path from Duration of Illness to RP-disability was added to optimally fit the MS data.

The model mutually fit to both groups, named the Multi-group Model, was used in subsequent multi-sample analysis. Phillips and Stuifbergen (2009) provide a detailed description of the data analysis.

Results

Mean scores on most variables differed significantly across the two samples. Fit statistics for all models are presented in Table 5. The FM confirmatory and structural models demonstrated excellent fit. Although χ^2 was significant in the MS confirmatory model, χ^2 was not significant in the MS structural model, and fit was adequate in both MS models. Across groups, all confirmatory-factor analytic loadings were significant at $p < .05$. All paths in the Multi-group Model were significant in at least one group.

The multi-sample analysis, wherein each group's data was used to estimate their respective models in a single analysis, supported a common model of disability. Constraining factor loadings and statistically analogous paths across groups improved fit and parsimony further (Figure 2 depicts the constrained model).

Across-groups Comparisons

Unstandardized path coefficients, standard errors, critical ranges (z statistics), and P values corresponding to the multi-sample analysis for each data set are displayed in Tables 6 and 7. Unstandardized coefficients are preferred for comparisons across groups because group-specific standard deviations influence the value of standardized coefficients. Path coefficients found to be equivalent across groups are represented in bold.

A sizable difference in the effect of Functional Limitations on SF-disability was found across groups. Depressive Symptoms exerted a substantial effect on RP-disability in women with MS whereas Functional Limitations had a greater impact in women with FM. Finally, for women with FM, higher age predicted fewer Functional Limitations; the opposite effect was observed in women with MS.

Within-group predictors of disability

Final path models displaying standardized coefficients are depicted in Figures 3 and 4. Statistically significant paths are printed in bold. Variable effects are interpreted as weak $\geq \pm 0.1$, moderate $\geq \pm 0.3$, and strong $\geq \pm 0.5$ (Cohen, 1988).

For women with FM, Depressive Symptoms and Functional Limitations influenced SF-disability almost equally (total effects .50 and .54, respectively). Conversely, the total effect of Functional Limitations on RP-disability was over three times greater than that of Depressive Symptoms (.73 versus .22). The indirect effects of Functional Limitations on SF-disability (.19) and RP-disability (.08) supports a mediation role for Depressive Symptoms, Social Support, and Economic Adequacy.

For women with MS, Depressive Symptoms exerted a larger total effect on SF-disability (.57) than did Functional Limitations (.31). Similar to women with FM, Functional Limitations had indirect effects on SF-disability (.17) and RP-disability (.11). Duration of Illness (.36), Depressive Symptoms (.36), and Functional Limitations (.33) had comparable total effects on RP-disability.

Discussion

Model development allowed testing the relative effects of certain risk factors (age, illness duration, and education), intra-individual factors (depressive symptoms and social support) and extra-individual factors (economic adequacy) on disability in women with these conditions. Our findings provide partial support for the Disablement Model in understanding predictors of disability in women with FM or MS. Although the analysis identified disease-specific relationships, a shared model of disability was specified for the two groups. Our results suggest disability is as much a function of psychosocial characteristics as the extent of functional limitations. Social support, depressive symptoms, and economic adequacy partially mediated the effect of functional limitations on disability. These findings also support the multidimensional conceptualization of functioning and disability described by the ICF. Recent work by Badley (2008) offers clarification of the ICF activity and participation components, which closely parallel functional limitations and disability, respectively, in our model. Ongoing efforts to operationally define the domains of Activities, Participation, and Environmental Factors in the ICF framework (Hickson *et al.*, 2005; Jette, 2006) have furthered progress towards the international and standardized measurement of disability necessary to advance disability research and practice.

Consistent with empirical literature, the impact of depression on disability was substantial (Kassam and Patten, 2006; Smith and Young, 2000). Depressive Symptoms exerted strong effects on SF-disability in both groups, and for women with MS, Depressive Symptoms explained more variance in RP-disability than did Functional Limitations. Unfortunately, depression may escape regular detection in women with MS receiving specialty care whose primary focus is on managing complex medical problems (Mohr *et al.*, 2006). Patients with symptoms of depression deserve referral to mental health professionals who appreciate psychosocial determinants of disability.

The effect of Functional Limitations on SF-disability and RP-disability was larger for women with FM versus women with MS, perhaps due to pain and fatigue symptoms experienced by persons with FM. Among seven different chronic pain syndromes, persons with fibromyalgia have reported the worst physical functioning and most severe pain (Porter-Moffitt *et al.*, 2006). Our study considered such symptoms subsumed by Functional Limitations; however that Bennett *et al.* (2002) found pain and fatigue mediated the effect of medical conditions on physical functioning, role functioning, and social functioning supports the inclusion of relevant symptoms in models predicting functioning and disability.

The large effect of Social Support on Depressive Symptoms suggests that modifiable mechanisms, i.e. social support, may be important to depression treatment. Satisfaction with social support, social participation, and living with someone had protective effects on depression in women with fibromyalgia (Franks *et al.*, 2004; Okifuji *et al.*, 2000) as have peer-led support interventions for women with MS (Hill *et al.*, 2006; Schwartz and Sender, 1999). Social service interventions may be particularly applicable to women lacking social networks unique to the workplace. That half or more of the women in this study were unemployed may explain the significant impact of Economic Adequacy on downstream variables. Relinquishing one's career in mid-life or substantially altering employment

circumstances to accommodate failing health could have a pronounced impact on psychological well-being.

Acknowledging extant incongruity in the definition of disability, the multi-sample model was intended to represent a general model disability for women with chronic disabling conditions. While the disablement process model guided our hypothesized research model, our SEM analysis involved model generation and therefore different models may exist that explain the data equally well. We tested cross-sectional models; causal relationships could not be proven and the directionality of some relationships could actually be reversed (disability as a predictor of depression). A causal theory of disability is difficult to support, due to the dynamic nature of disabling conditions, the environmental context, and the interaction between the two.

Women with disabilities face health problems related to both disability and gender. Disparities in employment limit their access to work-based disability insurance or health care benefits (Jans and Stoddard, 1999). They may encounter skepticism and inadequate treatment from medical professionals, particularly if their disability is not visible, further compounding physical and emotional distress. The ICF's inclusive conceptualization of disability lends itself to advancing the well-being of women with disabilities.

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Figure 1.
Research Model of the Disablement Process

Figure 2.
Multi-group Model, factor loadings and paths 1–7 constrained

Figure 3.
Path model for FMS sample

Figure 4.
Path Model for MS sample

Table 1**Study Abbreviations**

AIC	Akaike Information Criterion
CESD-10	Center for Epidemiologic Studies Depression Scale
CFI	Comparative fit index
FIQ PF	Fibromyalgia Impact Questionnaire physical functioning
FM	Fibromyalgia
ICF	International Classification of Functioning, Disability and Health
ISS	Incapacity Status Scale
MS	Multiple sclerosis
PRQ2000	Personal Resource Questionnaire 2000
RMSEA	Root mean square error of approximation
RP-disability	Role-Physical disability
SEM	Structural Equation Modeling
SF-disability	Social Functioning disability
SF-36	Medical Outcomes Study 36-item Short Form Health Survey
SF-36 PF	SF-36 Physical Functioning
SF-36 MH	SF-36 Mental Health
SF-36 RP	SF-36 Role Limitations due to Physical Health
SF-36 SF	SF-36 Social Functioning
TLI	Tucker-Lewis index

Table 2

Study Instruments and Variables

Instrument	Variable	Model Abbreviation	Subscale	Mean (SD)	Reliability
Demographic Form	Age	Age	---	MS: 45.5 (10.2) FMS: 53.3 (9.9)	N/A
	Education	Educ	---	MS: 15.4 (2.2) FMS: 15.1 (3.0)	N/A
	Duration of Illness	Dur_Ill	---	MS: 9.6 (6.95) FMS: 7.8 (5.83)	N/A
Center for Epidemiologic Studies Depression Scale, Short Form	Depressive Symptoms	cesd		MS: 10.6 (6.4) FMS: 14.7 (6.4)	$\alpha_{ms} = .88$ $\alpha_{fm} = .85$
	Adequacy of Financial Resources	Econ		MS: 24.6 (5.8) FMS: 22.6 (6.4)	$\alpha_{ms} = .96$ $\alpha_{fm} = .97$
Economic Adequacy Scale				FMS: 4.7 (2.4)	$\alpha_{fm} = .93$
Fibromyalgia Impact Questionnaire	Functional Limitations	mobility	Physical Functioning, Items 1–10	MS: 15.4 (7.8)	$\alpha_{ms} = .91$
Incapacity Status Scale	Functional Limitations	mobility	Mobility, Items 1–3, 6, 7	MS: 53.2 (28.7) FMS: 59.1 (23.4)	$\alpha_{ms} = .93$ $\alpha_{fm} = .89$
Medical Outcomes Study Short Form-36	Functional Limitations	pf	Physical Functioning, Item 3 a-j	MS: 60.6 (39.0) FMS: 66.8 (24.1)	$\alpha_{ms} = .83$ $\alpha_{fm} = .91$
	Disability	RP	Role Limitations-Physical, Item 4 a-d	MS: 29.5 (25.6) FMS: 53.4 (27.1)	$\alpha_{ms} = .85$ $\alpha_{fm} = .87$
	Disability	SF	Social Functioning, Items 6 & 10	MS: 30.2 (20.0) FMS: 42.5 (21.9)	$\alpha_{ms} = .86$ $\alpha_{fm} = .87$
	Depressive Symptoms	mh	Mental Health, Item 9 b,c,d,f,h	MS: 28.9 (6.0) FMS: 27.22 (6.6)	$\alpha_{ms} = .84$ $\alpha_{fm} = .82$
Personal Resource Questionnaire	Social Support	intm	Intimacy/Assistance, Items 1,5,15,19,23	MS: 27.9 (5.0) FMS: 25.2 (6.0)	$\alpha_{ms} = .78$ $\alpha_{fm} = .80$
		affrm	Integration/Affirmation, Items 2,3,8,12,18	MS: 27.6 (5.5) FMS: 24.4 (7.1)	$\alpha_{ms} = .79$ $\alpha_{fm} = .84$
		recip	Reciprocity, Items 6,9,11,14,20		

*
p<.05.**
p<.01.***
p<.001

Table 3

Pearson's Correlations for FM Sample

Variable	2	3	4	5	6	7	8	9	10	11	12	13
1. Age (years)	.01	.26**	.16*	-.14*	.11	.03	.17*	.14	-.25**	-.21**	-.08	-.21**
2. Education (years)		.10	.14	-.19**	-.19**	-.12	-.01	.01	-.05	-.06	-.17*	.02
3. Years of illness			-.04	-.01	.04	-.05	-.05	-.07	-.08	-.12	.03	-.01
4. Economic Adequacy				-.40**	-.33**	.37**	.26**	.28**	-.29**	-.32**	-.31**	-.33**
5. FIQ PF					.70**	-.20**	-.31**	-.31**	.40**	.27**	.68**	.50**
6. SF-36 PF						-.21**	-.21**	-.23**	.27**	.19**	.59**	.36**
7. Intimacy/Assistance							.60**	.59**	-.40**	-.44**	-.19**	-.31**
8. Integration/Affirmation								.73**	-.54**	-.56**	-.28**	-.37**
9. Reciprocity									-.47**	-.47**	-.25**	-.36**
10. CES-D										.79**	.49**	.60**
11. SF-36 MH											.36**	.53**
12. SF-36 RP												.60**
13. SF-36 SF												

*
p<.05**
p<.01

Table 4

Pearson's Correlations for MS Sample

Variable	2	3	4	5	6	7	8	9	10	11	12	13
1. Age (years)	.109	.41**	.06	.43**	.44**	.00	.12	.02	-.13	-.20*	.15	-.01
2. Education (years)		.07	.09	-.10	-.04	-.02	.21*	.12	-.09	-.12	-.03	-.04
3. Years of illness			.02	.47**	.46**	.06	.04	.09	-.09	-.17	.30**	-.08
4. Economic Adequacy				-.13	-.07	.42**	.37**	.40**	-.42**	-.37**	-.18	-.31**
5. ISS Mobility					.76**	-.13	-.09	-.11	.07	.02	.28**	.04
6. SF-36 PF						-.02	-.03	-.07	.17	.07	.41**	.25**
7. Intimacy/Assistance							.47**	.57**	-.34**	-.28**	-.09	-.29**
8. Integration/Affirmation								.72**	-.50**	-.43**	-.12	-.29**
9. Reciprocity									-.43**	-.34**	-.22*	-.36**
10. CES-D										.81**	.39**	.59**
11. SF-36 MH											.22*	.43**
12. SF-36 RP												.48**
13. SF-36 SF												

*
p<.05**
p<.01

Table 5

Fit Statistics (N = 197 for FMS group; N = 118 for MS group; N = 315 for Multi-group)

Model	χ^2	df	p	CFI	TLI	AIC	RMSEA
Confirmatory model for FM group	41.91	33	.14	.99	.98	157.91	.04
Confirmatory model for MS group	53.06	34	.02	.97	.93	167.01	.07
Structural model for FM group	59.84	50	.16	.99	.99	141.84	.03
Structural model for MS group	64.29	51	.10	.98	.97	144.29	.05
Multi-group Model	134.48	102	.02	.98	.97	294.48	.03
Multi-group Model, factor loadings and paths 1–7 constrained (Figure 2)	135.92	111	.05	.99	.98	277.92	.03

Table 6

Path Coefficients, Standard Errors and Critical Ratios for FM Sample

	Unstandardized Path Coefficients	Standard Error	Critical Ratio	P value
Dur_ILL → Functional Limitations	.22		.90	.367
Age → Functional Limitations	−.30	.15	−2.01	.044
Educ → Functional Limitations	−1.40	.42	−3.35	<.001
Age → Econ	.08	.03	2.45	.014
Functional Limitations → Econ	−.15	.02	−6.08	<.001
Functional Limitations → Social Support	−.09	.03	−3.24	.001
Econ → Social Support	.17	.08	2.27	.023
Age → Depressive Symptoms	−.11	.03	−3.57	<.001
Functional Limitations → Depressive Symptoms	.05	.02	3.29	<.001
Social Support → Depressive Symptoms	−.57	.07	−8.54	<.001
Econ → Depressive Symptoms	−.05	.06	−.87	.385
Educ → SF	.93	.40	2.32	.021
Functional Limitations → SF	.50	.09	5.50	<.001
Functional Limitations → RP	.84	.09	9.79	<.001
Depressive Symptoms → SF	2.21	.22	10.20	<.001
Depressive Symptoms → RP	.88	.22	3.91	<.001
Dur_ILL → RP	.17	.19	.90	.370

Table 7

Path Coefficients, Standard Errors and Critical Ratios for MS Sample

	Unstandardized Path Coefficients	Standard Error	Critical Ratio	P value
Dur_ILL → Functional Limitations	1.36	.37	3.72	<.001
Age → Functional Limitations	1.03	.31	3.27	.001
Educ → Functional Limitations	−.1.40	.42	−3.35	<.001
Age → Econ	.08	.03	2.45	.014
Functional Limitations → Econ	−.03	.02	−1.55	.121
Functional Limitations → Social Support	−.01	.02	−.33	.740
Econ → Social Support	.37	.08	4.85	<.001
Age → Depressive Symptoms	−.11	.03	−3.57	<.001
Functional Limitations → Depressive Symptoms	.05	.02	3.29	<.001
Social Support → Depressive Symptoms	−.57	.07	−8.54	<.001
Econ → Depressive Symptoms	−.26	.09	−2.84	.004
Educ → SF	.93	.40	2.32	.021
Functional Limitations → SF	.13	.07	1.85	.064
Functional Limitations → RP	.32	.13	2.44	.015
Depressive Symptoms → SF	2.21	.22	10.20	<.001
Depressive Symptoms → RP	2.17	.48	4.56	<.001
Dur_ILL → RP	1.44	.47	3.05	.002