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Role of Social Support in Predicting Caregiver Burden

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Abstract

Objective—To examine the unique contribution of social support to burden in caregivers of adults aging with spinal cord injuries (SCI).

Design—Secondary analyses of cross-sectional data from a large cohort of adults aging with SCI and their primary caregivers.

Setting—Multiple community locations in Pittsburgh, PA, and Miami, FL.

Participants—Caregivers of community-dwelling adults aging with SCI (n=173) were interviewed as part of a multisite randomized clinical trial. The mean age of caregivers was 53 years (SD=15) and of care-recipients 55 years (SD=13).

Interventions—Not applicable.

Main Outcome Measures—The primary outcome was caregiver burden measured with the Abridged Version of the Zarit Burden Interview. A hierarchical multiple regression analysis examined social supports (social integration, received social support, and negative social interactions) effect on burden in caregivers of adults aging while controlling for demographic characteristics and caregiving characteristics.

Results—After controlling for demographic characteristics and caregiving characteristics, social integration ($\beta = -.16$, $P < .05$), received social support ($\beta = -.15$, $P < .05$), and negative social interactions ($\beta = .21$, $P < .01$) were significant independent predictors of caregiver burden.

Conclusions—Findings demonstrate that social support is an important factor associated with burden in caregivers of adults aging with SCI. Social support should be considered for assessments and interventions designed to identify and reduce caregiver burden.

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Keywords

Caregivers; Spinal Cord Injury; Aging; Social Support

Life expectancy after spinal cord injury (SCI) has increased, lengthening the duration of the caregiving relationship,¹ potentially contributing to high levels of caregiver burden. Levels of burden have implications for the health and well-being of the caregiver as well as the individual with the SCI (care-recipient).^{2–4} For instance, burden is associated with poor life satisfaction, morbidity, and mortality.^{5–9} A close examination of the factors influencing burden is therefore necessary to identify caregivers at risk for poor outcomes and potential targets for interventions designed to preserve the health of the caregiving relationship.

Theoretical models of caregiving emphasize that care-recipient functional status is the primary stressor in the caregiving experience.¹⁰ This is consistent with empirical evidence demonstrating that compromised care-recipient functional status predicts negative outcomes.^{11–13} Additional caregiving characteristics directly influencing burden are the residential status of the caregiver/care-recipient dyad (e.g., co-residing or residing separately), and the presence or absence of in-home support services (e.g., home health aides).^{8, 9, 14, 15} Furthermore, demographic characteristics of the caregiver (age, gender, race, health status) and care-recipient (age) may also influence burden.^{8, 9, 14, 15} These factors also contribute to burden among caregivers of individuals with SCI (for care-recipients of all ages). Post et al.¹⁶ reports that older age, female gender, lower care-recipient functional status, and more recent SCI onset are predictors of caregiver burden. Dickson¹⁷ reports that in-home support services are perceived negatively by caregivers due to feelings of inadequacy and loss of environmental control. Furthermore, high levels of burden are associated with compromised caregiver health and social isolation. Conversely, positive aspects of caregiving reduce the negative effects of caregiving and decrease burden.¹⁷

Individuals aging with chronic conditions (e.g., SCI) often experience co-occurring medical conditions that require high degrees of social and physical support. As they age, they are particularly vulnerable to social isolation. Consequently, caregivers of individuals with SCI often face multiple and often extreme challenges in providing adequate care and, thus, may experience increased social isolation. With increased social isolation comes decreased social support.

Based on this information, several factors may contribute to burden in caregivers of adults aging with SCI; however, less is known about the role of social support in contributing to burden. We can glean additional information from theoretical models of caregiving. These models emphasize the importance of coping resources as a mitigator of the negative effects of stressors such as compromised care-recipient functional status. Social integration and support are consistently identified as key factors attenuating the perceived stress of the caregiver for caregivers of individuals with degenerative diseases.^{10, 18, 19} Social integration (family and friend networks, helping others, confidant relationships, and living arrangements) is associated with better caregiver mental and physical health and lower mortality.^{19–24} Received social support (physical, emotional, and informational support) is purported to protect individuals from the pathogenic effects of life stress or burden.²⁵ Nonetheless, not all types of social interactions are beneficial.²⁶ Negative social interactions (criticism, neglect, and demands) compromise an individual's health and well-being.²⁷

Thus, the contribution of social support to burden among caregivers of adults aging with SCI requires further examination, as it may be a meaningful target for future caregiving

interventions. No studies have yet examined predictors of burden in caregivers of adults aging with SCI, nor have studies examined the potential effect that social support may have on these caregivers.²⁸

Based on previous literature, we expect that demographic characteristics (older age, female gender, and compromised health status) and caregiving characteristics (lower care-recipient functional status and residential status) will predict burden in caregivers of adults aging with SCI. The purpose of this secondary analysis is to examine the role of social integration, received social support, and negative social interactions in predicting burden, after controlling for demographic and caregiving characteristics.

METHODS

We conducted a secondary analysis of data from a multisite randomized clinical trial testing a caregiver and care-recipient dyadic intervention.²⁹ We used cross-sectional baseline data for the current study analyses. Dyads were recruited from community locations in Pittsburgh, PA and Miami, FL. Outreach efforts were extensive, including radio and television announcements, newspaper articles and advertisements, newsletter articles, and community presentations. Both sites obtained Institutional Review Board approval, and both dyad members provided written informed consent.

Participants

Caregivers were included if they: provided physical or emotional support for an individual with a SCI; had regular contact with the individual with the SCI; maintained the relationship for the previous six months; were at least 18 years old; planned to stay in the current community for the next six months; had a telephone; and were fluent in English. Care-recipients were included if they: acquired a SCI due to injury or disease, resulting in a complete or incomplete SCI as defined by the American Spinal Injury Association; had a mobility impairment due to the SCI; were at least 35 years old; lived in a non-group community setting for at least one year; planned to remain in the current community for the subsequent six months; had a telephone; and were competent in English. Dyads were excluded if either member of the dyad: had a terminal illness (life expectancy <6 months); were in active cancer treatment other than maintenance use of tamoxifen or leuprolid; were blind or deaf; had cognitive impairment, as defined by the Short Portable Mental Status Questionnaire (≥ 4 errors)³⁰; or did not meet previously stated study criteria.

Procedures

Potential study caregivers were screened via telephone, and if they were interested and eligible an in-home assessment was conducted by a trained assessor. Caregivers were compensated \$25 for the baseline assessment.

Primary Outcome—Burden was measured using the Abridged Version of the Zarit Burden Interview (12 items),^{31, 32} measuring the degree to which a caregiver perceives financial, role, and personal burden from caregiving. Items were rated on a 5-point scale from 0 (never) through 4 (nearly always). We computed a total score (range 0 – 48) where a higher score indicated more burden. Standardized Cronbach's α was .85.

Predictors of Caregiver Burden

Demographic Characteristics: Caregiver and care-recipient demographic characteristics (age, gender, race, and employment status) were collected to identify potential confounding factors within caregiver burden.

Health status was assessed by asking caregivers and care-recipients to rate their health (1 item) on a 5-point scale (0, excellent; 4, poor). A higher score (range 0 – 4) indicated a compromised health perception. A recent meta-analysis found this measure to have a statistically significant relationship between compromised health perception and mortality while controlling for functional status, depression, and co-morbidities.³³

Caregiving Characteristics: Care-recipient functional status addressed both basic (ADL) and instrumental activities of daily living (IADL). The Katz Index of ADL measured ADL by assessing whether the care-recipient needed help in bathing, dressing, toileting, transfers, maintaining continence, and feeding (6 items).³⁴ Items were rated dichotomously (0, no; 1, yes). We computed a total score (range 0 – 6) where a higher score indicated more assistance required in ADL. Standardized Cronbach's α was .81.

The Instrumental Activities of Daily Living Scale measured IADL by assessing whether the care-recipient needed help using a telephone, shopping, preparing food, housekeeping, doing laundry, obtaining transportation, managing medications, and managing finances.³⁵ Items were rated dichotomously (0, no; 1, yes). We computed a total score (range 0 – 8) where a higher score indicated more assistance required in IADL. Standardized Cronbach's α was .79.

We measured in-home support services by totaling the number of housekeepers, personal care attendants, transportation services, and in-home healthcare workers the care-recipient received (12 items). Items were rated dichotomously (0, no service received; 1, service received). We computed a total score (range 0–12) where a higher score indicated more in-home support services.

Positive aspects of caregiving measured the degree that caregivers felt useful, needed, appreciated, important, and confident (11 items).³⁶ Items were rated on a 5-point scale (0, disagree a lot; 4, agree a lot). A higher computed total score (range 0–44) indicated a greater sense of positive aspects in caregiving. Standardized Cronbach's α was .86.

Caregiving characteristics (relationship to care-recipient, dyad residential status, i.e., whether or not co-residing, years living together, and level and severity of SCI) were collected to identify potential confounding factors within caregiver burden.

Social Support: Lubben Social Network Index measured social integration by assessing the number of individuals the caregiver interacts with monthly, talks with comfortably, and asks assistance from easily (3 items).³⁷ Items were rated on a 6-point scale (0, no individuals; 5, 9 or more individuals). We computed a total score (range 0 – 15) where a higher score indicated more social integration. Standardized Cronbach's α .76.

Received social support was measured using a modified version of the social support scale from the REACH I trials.¹⁵ Received social support assessed physical (providing services or assistance), emotional (offering empathy or caring), and informational (giving advice or guidance) support (3 items). Items were rated on a 4-point scale (0, never; 3, very often). We computed a total score (range 0 – 9) where a higher score indicated more received social support. Standardized Cronbach's α was .47, indicating that the three types of support sampled likely represent different constructs.

Negative social interactions were measured by assessing whether the caregivers felt others have made demands, been critical, pried into personal affairs, or taken advantage of them (4 items).³⁸ Items were rated on a 4-point scale (0, never; 3, very often). We computed a total

score (range 0–12) where a higher score indicated more negative social interactions. Standardized Cronbach's α was .81.

Data Analyses—We examined the distribution of the measures' scores, and computed bivariate correlations among all measures using Pearson and Kendall Tau statistics. Gender, race, employment status, and dyad residential status were analyzed as dichotomous variables in the regression analysis. In addition to frequently cited factors contributing to burden, independent variables with correlations of strength $r > .10$ were included in the model. Subsequently, we conducted a hierarchical multiple regression analysis. Items were entered into the regression analysis according to features frequently seen in caregiving models.^{11–13} Demographic characteristics are described as stable and unchanging, providing the foundation for the environment. Block 1 included demographic characteristics of the caregiver and care-recipient (CG and CR age, CG gender, race, employment status, and CG and CR perceived health status, Table 1). Following the caregiving models, caregiving characteristics are the primary stressors or environmental demands experienced by the caregiver. Block 2 added caregiving characteristics [care-recipient functional status (ADL and IADL status), in-home support services, positive aspects of caregiving, dyad residential status, and SCI chronicity]. Block 3 isolated the contribution of social support (social integration, received social support, and negative social interactions). Finally, regression diagnostics were conducted to ensure that collinearity [variance inflation factor (VIF) was < 10 and tolerance was $> .2$] was not affecting the model.

RESULTS

In the parent study, 459 caregivers were screened, 262 were not eligible, and 24 eligible caregivers refused participation, indicating that they were not interested in study participation or were too busy. Baseline assessment was completed by 173 caregivers.

The majority of the caregivers were women (75.8%, $n = 131$), white (74.0%, $n = 128$), employed (50.2%, $n = 87$), went to school beyond high school (68.2%, $n = 118$) and were spouses to the individual with the SCI (69.3%, $n = 120$). Their mean age was 53 years ($SD = 15$). The majority of the care-recipients were men (65%, $n = 112$), white (76%, $n = 131$), unemployed (36%, $n = 62$) or retired (36%, $n = 63$), and went to school beyond high school (73%, $n = 127$). Their mean age was 55 years ($SD = 13$). Care-recipients sustained SCI at the cervical level (51%, 35% of these were complete), thoracic level (29%, 53% of these were complete), and lumbar level (5%, 11% of these were complete). Chronicity of SCI was an average of 12 years (Table 2).

Correlation Analyses

Inspection of the scatterplots for burden and the independent variables revealed normal distribution and few outliers. Beyond the frequently cited factors contributing to caregiver burden, positive aspects of caregiving, dyad residential status, and SCI chronicity were correlated with burden (i.e., $r > .10$) and included in the model. Correlation coefficients are presented in Table 3. Caregiver relationship to care-recipient, care-recipient age, care-recipient perceived health status, SCI level, SCI severity, and years living together were not correlated with caregiver burden and were not included in the model.

Hierarchical Multiple Regression Analysis

Hierarchical multiple regression analysis findings are shown in Table 4. The model's average VIF was 1.40 and the tolerance ranged between .51 and .91, indicating no collinearity among predictors. Refer to Table 1 for variables within each block. In Block 1, demographic characteristics contributed 7% of the variance in caregiver burden. In Block 2,

after controlling for demographic characteristics, caregiving characteristics contributed an additional 26% of the variance. In Block 3, after controlling for demographic characteristics and caregiving characteristics, social support contributed an additional 9% of the variance in caregiver burden ($F_{199,170}=7.72$; $R^2_{adj}=.43$, $P<.01$).

Caregiver perceived health status ($\hat{\beta}=.26$, $P<.01$) explained the largest amount of variance in caregiver burden, followed by dyad residential status ($\hat{\beta}=.26$, $P<.01$), employment outside the home ($\hat{\beta}=.23$, $P<.01$), negative social interactions ($\hat{\beta}=.21$, $P<.01$), positive aspects of caregiving ($\hat{\beta}=-.21$, $P<.01$), care-recipient ADL status ($\hat{\beta}=.17$, $P<.05$), social integration ($\hat{\beta}=-.16$, $P<.05$), received social support ($\hat{\beta}=-.15$, $P<.05$), and in-home support services based on standardized beta scores.

DISCUSSION

Our primary focus was to examine the contribution that social support makes to burden in caregivers of adults aging with SCI, as social support is associated with health and burden.^{20–22, 25, 27} Considering the number of factors that could predict burden, social support contributed meaningfully to the variance in burden.⁴⁰ We discovered that higher levels of social integration and received social support were associated with lower burden in caregivers of adults aging with SCI, affirming other gerontology studies that reported that social integration promoted health^{20–22} and received social support reduced stress.^{23, 25} However, not all social interactions were reported as positive.²⁶ Members of one's social network may mean well, but they can also be demanding, thereby adversely impacting health outcomes.²⁷ We observed strong relationships between negative social interactions and burden, suggesting that interventions mitigating negative interactions while enhancing social integration and support may be particularly important.

In addition to the contribution of social support, a number of similarities between our findings and other caregiving studies were found. Consistent with studies examining caregiving of individuals with SCI, caregiver health status was associated with higher levels of burden.^{16, 41, 42} Caregivers with compromised health may find it more difficult to complete caregiving tasks due to their own physical or psychological limitations. Additionally, we found that co-residing with the care-recipient strongly predicted burden. Caregivers of individuals with degenerative diseases have described limited relief from caregiving while living with the care-recipient.⁴³ Several recent gerontology studies suggested that daily exposure to the suffering of a close friend or relative, such as would be the case when the dyad is co-residing, was associated with burden and depression.^{44–46}

We discovered that positive aspects of caregiving were associated with burden. Caregivers who reported that caregiving made them feel useful, needed, important, and confident reported lower levels of burden, demonstrating the potential positive effect of a caregiver's psychological approach. Caregivers of individuals with SCI reported that focusing on the positive aspects to be an effective coping mechanism.¹⁷

Previous studies examining caregiving of individuals with SCI found care-recipient functional status to be a predictor of burden and compromised quality of life.^{16, 41, 42} We also demonstrated that care-recipient functional status (ADL status) predicted burden for caregivers of adults aging with SCI. However, we found that IADL status did not predict burden, and level and severity of the SCI were not associated with burden, yet higher levels of SCI and IADL status were significantly associated with use of in-home support services ($r=-.16$, $P<.05$; $r=.46$, $P<.01$, respectively). Thus, burden may be reflected in the use of in-home support services, which was found to predict burden.

Differences between our findings and the findings of other caregiving studies were found. Caregivers employed outside the home reported higher burden. No other studies have examined employment's contribution to burden in caregivers of individuals with SCI, but this finding has been reported in other caregiving populations.⁴⁷ Employment outside the home may be associated with burden due to competing work and caregiving roles. Caregivers may find it difficult to disassociate from their caregiving role while at work.

Caregivers and care-recipients were, on average, in their mid-fifties. However, caregiver demographic characteristics (age, gender, and race) were not significant predictors of burden. While these factors have been shown to be important in other SCI samples,^{16, 41, 42} they appear to be less important for caregivers of adults aging with SCI. Additionally, despite the large variability in care-recipient age, SCI chronicity, and health status, none significantly predicted caregiver burden. Potentially, care-recipient demographics and SCI chronicity cease to be important after caregivers completed the post-acute adjustment phase (approximately 6 months).

Study Limitations

Several study limitations should be acknowledged. The dyads' education level is fairly high, and therefore the sample may not be representative of the population of caregivers of adults aging with SCI. Also, we conducted a cross-sectional analysis, so caution is advised in making causal interpretations of findings. It is possible that caregivers with high levels of burden are more likely to perceive negative social interactions, or alternatively, are more likely to generate negative social interactions due to their burden. To address these issues, longitudinal studies are needed. Conversely, this study has many strengths, including a large, distinct sample and a comprehensive analytic approach that allows for assessment of the independent effects of social support. Our findings provide a firm foundation for future studies of caregivers of adults aging with SCI.

CONCLUSIONS

In summary, caregiver's perceived health status, residential status, employment outside the home, perceived positive aspects of caregiving, care-recipient functional status (ADL and IADL status), in-home support services, and social support appear to strongly influence caregiver burden. Negative social interactions, among social support, most strongly predicted burden. With knowledge of these predictors, further examination of their impact on caregivers of adults aging with SCI may be useful for identifying ways to improve caregiver health and inform interventions.

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Abbreviations

SCI	Spinal Cord Injury
ADL	Activities of Daily Living
IADL	Instrumental Activities of Daily Living
VIF	Variance Inflation Factor

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Table 1**VARIABLE CATEGORIES**

Demographic Characteristics	Caregiving Characteristics	Social Support
Age (CG/CR)	ADL Status (CR)	Social Integration (CG)
Gender (CG)	IADL Status (CR)	Received Social Support (CG)
Race (CG)	In-Home Support Services (CR)	Negative Social Interactions (CG)
Employment Status (CG)	Positive Aspects of CG (CG)	
Perceived Health Status (CG/CR)	Dyad Residential Status (CG/CR)	
	Chronicity of SCI (CR)	

Note. CG=caregiver. CR=care-recipient.

Table 2**DYAD DEMOGRAPHICS AND CHARACTERISTICS**

	Caregivers	Care-recipients
	<i>n</i> = 173	<i>n</i> = 173
Age, years, $\bar{x} \pm SD$	53 $\pm$ 15	55 $\pm$ 13
Female	131(76)	61(35)
Education		
Less than high school	7(4)	9(5)
High school	50(29)	37(21)
More than high school	118(68)	127(73)
Employed		
Employed Outside the Home	81(47)	32(19)
Homemaker Inside the Home	6(4)	9(5)
Unemployed	86(49)	132(76)
Race		
White	128(74)	131(76)
African American	23(13)	19(11)
Hispanic	18(10)	17(10)
Other	4(2)	6(4)
Income		
<20,000	25(14)	36(21)
20,000–39,000	40(23)	37(21)
40,000–59,000	40(23)	28(16)
>60,000	59(34)	64(37)
Dyad co-residential status	140(81)	
Relationship to individual with SCI		
Spouse	120(69)	
Parent	4(2)	
Child	14(8)	
Other	34(20)	
Length of caregiving relationship, years, $\bar{x} \pm SD$	8 $\pm$ 9	
Chronicity of SCI, years, $\bar{x} \pm SD$		12 $\pm$ 12
Level of SCI		
Cervical		88(51)
Thoracic		51(29)
Lumbar		9(5)
Unknown		25(14)
Severity of SCI		
Complete		63(36)
Incomplete		84(49)
Unknown		26(15)

	Caregivers	Care-recipients
	<i>n</i> = 173	<i>n</i> = 173
Caregiver Burden (range 0–48) *, $\bar{x} \pm SD$	11.82±7.75	
Perceived Health (range 0–4) *, $\bar{x} \pm SD$	1.53±1.00	
Positive Aspects of CG (range 0–44), $\bar{x} \pm SD$	32.82±8.60	
Social Integration (range 0–15), $\bar{x} \pm SD$	9.08±3.17	
Received Social Support (range 0–9), $\bar{x} \pm SD$	2.97±1.78	
Negative Interactions (range 0–12) *, $\bar{x} \pm SD$	2.35±2.44	
ADL Status (range 0–6) *, $\bar{x} \pm SD$		2.85±2.07
IADL Status (range 0–8) *, $\bar{x} \pm SD$		4.28±2.36
In-Home Support Services (range 0–12), $\bar{x} \pm SD$		2.10±1.52

Note. Values expressed as a n(%), unless otherwise noted.

* Higher scores indicate negative outcomes.

CR=care-recipient. CG=caregiving.

Table 3

CORRELATES OF CAREGIVER BURDEN

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Caregiver Burden (CG)																			
2. Age (CR)	-.04																		
3. Age (CG)	.01	.52 [†]																	
4. Gender [†] (CG)	-.01	-.01	.06																
5. Black [†] (CG)	-.10	.05	-.09	-.06															
6. Hispanic [†] (CG)	-.04	-.18 [*]	-.21 [†]	.03	-.13														
7. Other [†] (CG)	-.02	-.03	-.02	-.09	-.06	-.05													
8. Employed Inside Home [†] (CG)	.06	-.01	-.11	.11	.02	.04	-.03												
9. Employed Outside Home [†] (CG)	.04	-.35 [†]	-.36 [†]	.01	.01	.06	.01	-.18 [*]											
10. Perceived Health Status (CR)	.12	.08	-.07	-.02	.09	-.11	.12	.02	.02										
11. Perceived Health Status (CG)	.26 [†]	.02	.12	-.10	.05	.01	-.04	.12	-.28 [†]	.03									
12. ADL Status (CR)	.34 [†]	.05	.03	-.08	.01	-.06	-.03	.01	-.03	-.03	-.02								
13. IADL Status (CR)	.33 [†]	.07	-.02	.00	.06	-.02	-.03	.06	.02	.09	-.01	.59 [†]							
14. In-Home Support Services (CR)	.24 [†]	.03	.02	.06	.02	.07	-.01	.01	.08	.15	-.01	.41 [†]	.46 [†]						
15. Positive Aspects of CG (CG)	-.31 [†]	-.01	-.13	-.09	.13	.12	.03	-.01	.04	.01	-.10	.02	.06	.04					
16. Dyad Residential Status [†] (CG/CR)	.21 [†]	.06	.11	.14	-.20 [†]	-.08	-.02	.01	-.16 [*]	-.05	-.04	.09	-.04	-.23 [†]	-.19 [†]				
17. Chronicity of SCI (CR)	-.18 [*]	-.01	-.05	-.02	-.05	.02	.13	-.04	.06	.02	-.18 [*]	-.15 [*]	-.24 [†]	-.11	.14	.08			
18. Social Integration (CG)	-.20 [†]	-.08	.08	.03	-.19 [†]	-.22 [†]	-.11	-.03	.09	.08	-.06	.00	-.09	-.06	-.09	-.01	-.03		
19. Received Social Support (CG)	-.21 [†]	-.21 [†]	-.08	-.13	-.04	-.08	.09	-.09	.06	.20 [†]	.03	.04	.05	.20 [†]	.18 [*]	-.27 [†]	.00	.35 [†]	
20. Negative Social Interactions (CG)	.20 [†]	-.01	-.30 [†]	-.22 [†]	.11	.04	-.05	.04	.00	-.10	.15 [*]	-.02	.06	.13	.01	-.20 [†]	-.08	-.08	.12

Note.

* *p* .05.† *p* .01.

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Pearson correlations, unless noted with ‡ (Kendall's Tau correlation).

CR=care-recipient. CG=caregiver.

Table 4

HEIRARCHICAL MULTIPLE REGRESSION

CG Burden, Block 1: Demographics			CG Burden, Block 2: Demographics + Caregiving Characteristics			CG Burden, Block 3: Demographics + Caregiving Characteristics + Social Support		
$\hat{\beta}$	P		$\hat{\beta}$	P		$\hat{\beta}$	P	
Intercept	.17	Intercept		.21	Intercept		.15	
Age (CR)	-.05	Age (CR)	-.06	.43	Age (CR)	-.04	.56	
Age (CG)	.07	Age (CG)	.04	.68	Age (CG)	.09	.27	
Gender (CG)	-.02	Gender (CG)	-.07	.32	Gender (CG)	-.04	.54	
White (ref.)	-	White (ref.)	-	-	White (ref.)	-	-	
Black (CG)	-.12	Black (CG)	-.05	.47	Black (CG)	-.11	.09	
Hispanic (CG)	-.05	Hispanic (CG)	.00	.99	Hispanic (CG)	-.06	.39	
Other (CG)	-.03	Other (CG)	.00	.99	Other (CG)	.01	.89	
Unemployed (ref.)	-	Unemployed (ref.)	-	-	Unemployed (ref.)	-	-	
Employed Inside Home (CG)	.09	Employed Inside Home (CG)	.07	.28	Employed Inside Home (CG)	.07	.28	
Employed Outside Home (CG)	.17	Employed Outside Home (CG)	.18	.02	Employment Outside Home (CG)	.23	.00	
Perceived Health Status (CR)	.14	Perceived Health Status (CR)	.11	.10	Perceived Health Status (CR)	.07	.30	
Perceived Health Status (CG)	.29	Perceived Health Status (CG)	.28	.04	Perceived Health Status (CG)	.26	.00	
		ADL Status (CR)	.14	.10	ADL Status (CR)	.17	.03	
		IADL Status (CR)	.17	.04	IADL Status (CR)	.15	.06	
		In-Home Support Services (CR)	.16	.05	In-Home Support Services (CR)	.15	.05	
		Positive Aspects of CG (CG)	-.24	.00	Positive Aspects of CG (CG)	-.21	.00	
		Dyad Residential Status (CG/CR)	.28	.00	Dyad Residential Status (CG/CR)	.26	.00	
		Chronicity of SCI (CR)	-.05	.44	Chronicity of SCI (CR)	-.05	.45	
					Social Integration (CG)	-.16	.02	
					Received Social Support (CG)	-.15	.03	
					Negative Social Interactions (CG)	.21	.00	

Note. CG=caregiver. ref.=referent. CR=care-recipient.