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Communal Behaviors and Psychological Adjustment of Family Caregivers and Persons With Spinal Cord Injury

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Abstract

Objective—Examined the influence of mutual communal behaviors on the adjustment reported by persons with spinal cord injury (SCI) and their family caregivers. Previous research has found that persons who have a history of mutually communal behaviors in relationships may react differently to relationship changes after an acquired physical disability than dyads with few communal behaviors.

Method—Family caregivers and persons with SCI were administered measures of mutual communal behaviors, depression, and life satisfaction. Structural equation modeling was used to test the relations among caregivers' communal behaviors and care recipients' communal behaviors, depression, and life satisfaction.

Results—Caregiver and care recipient reports of communal behaviors were not significantly correlated. Significant paths indicated that care recipients' communal behavior scores were positively associated with their life satisfaction, and care recipients' depression was inversely associated with their life satisfaction. Caregivers' communal behavior scores were unrelated to their self-reported adjustment.

Conclusions—Caregiver–care recipient dyads may differ in their perceptions of communal behaviors in their relationships. Although care recipient reports of communal behavior may be related to their life satisfaction, communal behaviors may not serve a similar function among caregivers of persons with SCI.

Keywords

spinal cord injury; caregiver; depression; communal behavior; adjustment

Communal relationships and exchange relationships are distinguished by the motivation of giving a benefit to the other person. In communal relationships, a benefit is given in response to a need or to demonstrate a general concern for another; however, in exchange relationships,

a benefit is given with an expectation of receiving a comparable benefit in return or as a response to a previously received benefit (Clark & Mills, 1993; Williamson & Clark, 1989, 1992; Williamson, Clark, Pegalis, & Behan, 1996). Communal relationships are most likely to be found among family members, romantic partners, or close friends. Because individuals in communal relationships are responsive to each other's needs, they experience mutually rewarding and satisfying relationships. Communal relationships are believed to be beneficial to individuals who assume caregiving roles for a family member who has incurred a severe disability. For example, persons who have a history of mutually communal behaviors would likely perceive caregiving as a continuation of a caring and reciprocally rewarding relationship with a family member who may now require assistance in tasks of daily living.

Consistent with this reasoning, Williamson and colleagues have found in their study of spousal caregivers of persons with dementia that caregivers were less depressed and less frequently engaged in potentially harmful behaviors when the pre-illness caregiver-care recipient relationship was characterized by mutual responsiveness to each other's needs (i.e. more communal in nature; Williamson & Schulz, 1990; Williamson, Shaffer, and the Family Relationships in Late Life Project, 2000). These effects were not attributable to demographic factors, amount of care provided, severity of the care recipient's illness, or length of time in the caregiving role. Generally, caregivers whose relationships with care recipients are characterized by fewer prior communal behaviors report stronger feelings of burden and show more depressive symptoms; such relationships could be predictive of caregivers resenting recipients and the caregiving role (Williamson & Shaffer, 1998; Williamson, Shaffer, & Schulz, 1998). These associations have also been observed among caregivers of individuals with cancer (Williamson & Schulz, 1995).

Family caregivers who lack a communal relationship with a care-recipient prior to the onset of disability may provide care more out of duty or obligation than out of concern for the recipient's welfare (Williamson & Schulz, 1995). Providing care, in this case, may induce resentment because it qualifies as a highly communal but "out-of-role" activity for people unaccustomed to placing their partner's needs ahead of their own (or having their partners behave in kind toward them). Indeed, distress among caregivers in less communal relationships is more closely related to perceived burdens associated with providing care than to declines in expressed intimacy and affection (Williamson & Shaffer, 1998). Moreover, caregiver resentment may result in part from the loss of idiosyncratic activities brought on by the severity of the recipient's symptoms rather than by a decline in intimacy and affection (Williamson, Shaffer, & Schulz, 1998).

Theoretical explanations of caregiver-care recipient dynamics are of keen interest in rehabilitation psychology. The number of family caregivers has increased to the extent that caregiving constitutes a significant public health concern in light of the risks of caregiving to personal health, well-being, and income across the life span (Crews, in press). Family caregivers are "the largest group of care providers" in the United States (Parish, Pomeranz-Essley, & Braddock, 2003, p. 174), and the market value of the long-term care that they provide exceeds that spent on formal health and nursing home care (Vitaliano, Young, & Zhang, 2004, p. 13). The ability of family caregivers to meet the demands of routine family life while providing informed, skilled, and emotional support to a family member with a severe disability can have a direct impact on the health and well-being of both individuals (Elliott & Parker, in press). It is important to identify characteristics of members of dyadic relationships who may be at risk for complicated adjustment and distinguish these individuals from those who may be more inclined to experience a higher quality of life.

Unfortunately, caution is warranted in extrapolating from studies of caregiving scenarios that may be relatively time limited (because of disease progression or aging processes) to scenarios

in which an individual may face a normal life expectancy with considerable ongoing needs for daily assistance. We know, for example, that many persons who incur spinal cord injuries (SCI) may face a life expectancy similar to that of the general population, and these individuals often report that partners and family members are more helpful to them than professional staff as they cope with their disabilities (Kennedy & Rogers, 2000). Over time, however, we know these relationships become much more complex as social support may wane, and interaction patterns and ineffective coping may inadvertently compromise personal health, reinforce disabled behavior, or contribute to distress, anger, and depression (see Elliott & Rivera, 2003; Elliott & Shewchuk, 2004, for reviews of this literature).

We conducted the present study to examine the degree to which communal behaviors influence adjustment following SCI. Communal relationship theory and research led us to expect that caregiver and care recipient reports of mutual communal behaviors would be significantly correlated. We also expected that caregivers' mutual communal behaviors would be negatively associated to their own depression scores and positively related to their satisfaction with life. This same pattern was expected among care recipients. Although depression is a significant predictor of life satisfaction (Aquino, Russell, Cutrona, & Altmaier, 1996; Chang, 1998; O'Connor & Vallerand, 1998), we examined these as two distinct outcome variables because they represent different psychological constructs. Finally, we examined the possibility that caregiver communal behaviors could be significantly associated with care recipient depression and life satisfaction.

Method

Participants

Prospective participants were recruited from an inpatient SCI rehabilitation program and from the community. Individuals who were admitted to the inpatient SCI program were informed of the study by rehabilitation staff, and those who expressed interest were provided details about the project by a trained research assistant. Community-residing individuals were informed by mailings conducted by the Alabama Head Injury Association, via flyers distributed at local conferences and advertisements on Web sites, and in a newsletter provided by the rehabilitation facility to interested individuals. Specifically, prospective participants were informed of Project FOCUS, a clinical study of the effects of an ongoing, home-based training program for family caregivers of persons with SCI (cf. Rivera, Shewchuk, & Elliott, 2003). To be eligible to participate, individuals had to be 18 years or older; the care recipient had to have been diagnosed with SCI and have a family member (or "fictive kin") who was clearly identified as a caregiver (by the caregiver and the care recipient) and who was living in the same household as the person with the SCI. Participants also had to have a telephone and a television at home to be in the project, and both caregiver and care recipient had to consent to the project and be randomly assigned to an intervention group or to a control group. Participants could terminate their involvement at any time during the project, but they were informed that the project would request their involvement for 1 year. Recruitment occurred over a 4-year period.

Thirty-four individuals declined to participate in the study (15 of these individuals stated no interest in the study), and 22 persons who contacted research staff in response to advertisements and flyers in the community could not be reached for follow-up discussions (20 men, 2 women, all with some form of SCI). Twenty-three community-residing individuals with SCI who contacted research staff were found to be ineligible for a variety of reasons (16 men, 7 women; primary reasons for ineligibility included "no caregiver at home" and "lives independently"). Data on the number of inpatients who were not interested or responsive to information about the study were not available because of concerns for patient confidentiality.

Sixty-one pairs of caregivers and care recipients consented to participate in this study. Forty-one caregivers agreed to participate while the care recipient was receiving inpatient services for a recent-onset SCI (<12 months), and twenty community-residing caregivers responded to written advertisements, letters, or flyers. The caregiver sample included 7 men and 54 women whose ages ranged from 20 to 85 years ($M = 48.57$, $SD = 15.26$). Relationships with the care recipient included 20 (32.8%) wives, 18 (29.5%) mothers, 5 (8.2%) daughters, 4 (6.6%) husbands, 4 (6.6%) grandparents, 5 (8.2%) others, 3 (4.9%) siblings, 1 (1.6%) father, and 1 (1.6%) friend. Forty-two (68.9%) persons identified as White, and 19 (31.1%) identified as Black. The educational level ranged from 6th grade to a master's degree ($M = 12.08$ years of education, $SD = 2.85$).

Forty men and 21 women with SCI receiving assistance from these caregivers also participated. This sample included 20 (32.8%) husbands, 19 (31.1%) sons or daughters, 5 (8.2%) fathers or mothers, 4 (6.6%) wives, 4 (6.6%) grandchildren, 5 (8.2%) others, 3 (4.9%) siblings, and 1 (1.6%) friend. Ages ranged from 18 to 82 years ($M = 40.85$, $SD = 16.74$). Forty-two persons (68.9%) were White, and 19 (31.1%) were Black. The educational level ranged from 3rd grade to master's degree ($M = 11.9$ years, $SD = 2.76$). There were 25 (41%) persons with paraplegia and 36 (59%) persons with tetraplegia in this sample. Thirty nine (63.9%) persons had incomplete lesions, and 22 (36.1%) had complete lesions. Time since the onset of SCI ranged from 1 month to 324 months ($M = 32.10$, $SD = 68.48$) for the total sample. Forty-one individuals had a recent-onset SCI (ranging from 1 month to 11 months since onset), and 20 had lived with SCI for an extended period of time (ranging from 13 months to 324 months).

Measures

Basic demographic information was obtained from both Caregivers and care recipients, including their age, sex, ethnicity, education level, and relationship between them.

Communal behavior—The 10-item Mutual Communal Behaviors Scale (MCBS; Williamson & Schulz, 1995; Williamson & Shaffer, 1996, 1998; Williamson et al., 1998) was used to retrospectively assess frequency of behavioral expressions of communal feelings between caregiver and care recipient. Respondents were instructed to think about the type of interactions they had with the caregiver or care recipient before the disability occurred. Five items evaluated communal behaviors directed toward the other individual (e.g., the respondent trying to cheer the other person up, trying to help her or him). Five additional items evaluated communal behaviors directed toward the respondent (e.g., the other person trying to please the respondent, enjoying responding to the respondent's needs). Respondents indicated frequency of these behaviors (1 = *never*, 4 = *always*). The MCBS has good psychometric properties and is stable over time. Cronbach's alpha ranged from .86 to .88, and test-retest reliability ranged from .67 to .71 in previous studies (Williamson & Schulz, 1995).

Depressive behavior—The Inventory to Diagnose Depression (IDD; Zimmerman & Coryell, 1987) was used to assess depressive behavior. The IDD was designed to provide a general severity index of depression, and a categorical diagnosis of major depressive disorder (MDD) according to the criteria in the *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed., rev.; American Psychiatric Association, 1987). The IDD is a 22-item measure of depressive behavior, and each item is rated on a five-point scale ranging from 0, *no presence of the symptoms*, to 4, *severe symptomology* (Zimmerman, Coryell, Corenthal, & Wilson, 1986). Acceptable test-retest reliabilities (.98 over days) and internal consistency (.92) coefficients have been reported; correlations with structured interview estimates of MDD and other self-report measures of depression have been adequate (ranging from .80 to .87; Zimmerman & Coryell, 1987; Zimmerman, Coryell, Corenthal, & Wilson, 1986; Zimmerman, Coryell, Wilson, & Corenthal, 1986). The sum of the responses provides a total severity score;

higher scores reflect greater depressive behavior. The IDD has been found to be a sensitive and rather conservative indicator of depression among community-residing adults and persons with a variety of health problems (Frank et al., 1992).

Satisfaction with life—The Satisfaction With Life Scale (SWL; Diener, Emmons, Larsen, & Griffin, 1985) was used to assess life satisfaction. The SWL is a five-item instrument; each item is rated on a Likert-type response format ranging from 1, *strongly disagree*, to 7, *strongly agree*. On the SWL, individuals are asked such questions as whether their life is close to their ideal or whether they would describe the conditions of their life as excellent. Higher scores reflect greater subjective well-being. The SWL has evidenced internal consistency ($\alpha = .87$) and reliability (2-month test–retest coefficient = .82; Diener et al., 1985). Correlates with other instruments indicate that the scale is relatively independent of social desirability effects and psychopathology, and it is favorably associated with other measures of life satisfaction (Diener et al., 1985).

Procedure—After obtaining informed consent, we interviewed caregivers and care recipients separately. All measures were administered orally with research staff recording the responses. Research participants received \$25 after completing the interview. The assessment was conducted in the participants' homes.

Data Analyses—Care recipient depression and care recipient life satisfaction were treated as two observed criterion variables. Two observed predictor variables were caregiver communal behaviors and care recipient communal behaviors. Structural equation modeling (SEM) was used to test the relations among caregiver and care recipient communal behaviors and the depression and life satisfaction scores. An a priori model—displayed in Figure 1—was designed to test our initial hypotheses concerning the anticipated relationships between caregiver and care recipient communal behavior scores and their corresponding levels of psychological adjustment. In the event the a priori model was not supported, we had a corrected model.

Results

Means and standard deviations were computed for all the research variables. Table 1 displays the means, standard deviations, and correlations among them. Initial correlational analysis revealed several intriguing findings. Caregiver and care recipient scores on the MCBS were not significantly correlated (.19), indicating a lack of congruence across dyads in their perceptions of communal behaviors in their relationships. Furthermore, and in contrast to prior research, communal behaviors were not significantly associated with depression scores obtained from caregivers and care recipients, nor were caregiver communal behaviors significantly associated with caregiver life satisfaction. Caregiver depression was not significantly correlated with care recipient depression (.17); however, life satisfaction scores were significantly correlated (.45) across dyads. Thus, the observed correlations indicated that our a priori model could not be supported by the data. We thus computed an empirically derived model, designed to provide a best fit solution to the data.

The resulting model, depicted in Figure 2, was tested with SEM. This model had a total of 10 parameters. Fixed parameters were the error variances of two predictor variables: the relation between caregiver communal behaviors and care recipient life satisfaction and the relation between care recipient communal behaviors and care recipient depression. All other parameters were estimated.

SEM results indicated that this model provided the best fit to these data, $\chi^2(4, N = 61) = 2.66$, $p = .620$, root-mean-square error of approximation (RMSEA) = 0.0. Significant paths

confirmed that care recipients' communal behaviors were significantly associated with their life satisfaction ($.56, t = 3.44, p < .05$), and their depression scores were inversely associated with their life satisfaction ($-.36, t = -4.92, p < .05$). Greater communal behaviors—as experienced and reported by the individuals with SCI—were predictive of greater life satisfaction; lower life satisfaction, however, was directly associated with higher depression scores. Caregivers' communal behaviors did not have significant influence on care recipients' depression. Path analysis also indicated that there were no indirect effects of the communal behavior variables on care recipient life satisfaction. Moreover, path analysis suggested that almost 40% of variance in care recipients' life satisfaction was explained by their communal behavior scores, whereas only 2% of variance in care recipients' depression was explained.

To obtain further insights into the lack of support for our a priori model, we conducted several post hoc analyses. Mean comparisons determined that depression and life satisfaction scores did not differ significantly between caregivers and care recipients. However, care recipients reported significantly higher communal behavior scores ($M = 34.74$) than did caregivers ($M = 32.59$). To explore possible effects of the type of relationship on the self-report measures, we conducted several one-way analyses of variance (ANOVAs) on group differences in depression, life satisfaction, and communal behavior scores. Only care recipient life satisfaction was significantly different as a function of relationship type, $F(8, 52) = 2.41, p < .05$. A follow-up multiple comparison procedure revealed that care recipients whose caregiver was a mother reported significantly lower life satisfaction ($M = 17.39, N = 18$) than those whose caregiver was a grandparent ($M = 27.50, N = 4, p < .05$). However, this finding should be interpreted with caution, considering the difference between the (large) number of mother caregivers and the (small) number of other types of caregivers in the sample.

We also found that caregivers in spousal relationships with care recipients did not significantly differ in their communal behavior scores ($M = 32.83, SD = 6.16, N = 24$) from nonspousal caregivers ($M = 32.43, SD = 5.74, N = 37$). Similarly, no differences were found in communal behavior scores reported by care recipients who were spouses of a caregiver ($M = 34.63, SD = 5.74$) and those who were not in spousal relationships with a caregiver ($M = 34.81, SD = 4.63$).

A trend was found within these particular subgroups: Among caregivers–care recipients who were spouses, communal behavior scores were moderately correlated ($r = .38, p = .07, N = 24$), and scores of the nonspousal caregiver–care recipient dyads remained unrelated ($r = .03, ns$). This pattern implies that spousal caregiver–care recipient dyads may have some shared history of communal behavior that may not be observed—or operational—among non-spousal dyads. The extent to which this shared history may facilitate the palliative effects of communal behaviors for spouses in this caregiving scenario cannot be discerned from the present study, in light of the relatively low number of spouses and the apparent lack of differences on the measures we used.

We then categorized caregivers and care recipients into four distinct groups on the basis of the degree of congruence between their scores on the communal behaviors measure. Using a median split on the MCBS for caregivers and care recipients, we found 14 dyads were congruent in their reports of high communal behavior, and 19 were classified as congruent in their reports of low communal behavior. Thirteen dyads were categorized as incongruent because the care recipient scores were low (and the caregiver scores were high), and 15 dyads were incongruent because the care recipient scores were high (and the caregiver scores were low). This distribution was not significantly different from that which would be expected by chance, nor was there any association between the type of relationship and the four communal behavior groups. However, a significant association was found by care recipient gender, $\chi^2(3, N = 61) = 8.00, p < .05$. Men were overrepresented in relationship dyads that were characterized

as congruent in low communal behavior scores ($N = 16$) and as incongruent with care recipients reporting high communal behaviors ($N = 11$). This finding should be interpreted with caution, however, given the low number of cases across cells and the number of men in care recipient roles, generally, in the study.

Finally, we wondered whether there were different patterns in these data as a function of the amount of time living with SCI. Although we did not collect information on the amount of time spent in the caregiver role, we had information about the number of months since the onset of SCI, and the majority ($N = 41$) of the sample of care recipients had incurred SCI within 1 year of the first interview. Mean comparisons found caregivers who were with care recipients who had recent-onset injuries reported significantly higher communal behavior scores ($M = 33.83$) than caregivers who were with care recipients who had lived with SCI for an extended period of time ($M = 30.05$, $p < .05$). No other differences were found between the two groups on any self-report variable.

Discussion

Although mutually communal behaviors have been shown to influence the adjustment of caregivers of persons with dementia (Williamson et al., 2001) and cancer (Williamson & Schulz, 1995), the present study indicates that communal behaviors have no palliative associations on the distress reported by caregivers of persons with SCI. Furthermore, our data suggest that there may be considerable incongruence between persons with SCI and their family caregivers in their reports of communal behaviors in their relationship. The positive association between care recipients' communal behaviors and their life satisfaction indicates that these differences in the perceptions of a communal relationship are not trivial and may, in fact, be related to personal adjustment in important ways.

These results imply that research concerning communal behaviors may lack applicability to family caregiving following SCI. This may be due in part to the rigorous and occasionally extreme changes many family caregivers experience following the onset of SCI. It should be noted, however, that prior studies of communal behaviors have examined spouses and intimate partners of care recipients; our sample included spouses (39%) and other family members who assumed a caregiver role. As such, this sample was representative of many caregiving situations in SCI. Yet those in intimate relationships may experience different dynamics in care-giving episodes that draw directly on past communal behaviors: Dyads characterized by more distal relationships may have different dynamics (and fewer opportunities for past communal behavior prior to SCI) that subsequently influenced our results.

Given the immense role changes often associated with caregiving following SCI, it is possible that other theoretical processes merit empirical attention in our attempt to understand caregiver and care recipient adjustment after SCI. For example, social exchange theory may be useful in appreciating the possible power dynamics in the caregiver-care recipient dyad (Horwitz, Reinhard, & Howell-White, 1996). Equity theory may hold considerable potential in contributing to the understanding of caregiver depression and burnout in the event that caregivers perceive little benefit or reciprocity in caring for a loved one with a severe disability (as in multiple sclerosis; Ybema, Kuijer, Hagedoorn, & Bruunk, 2002). These theoretical models may have greater explanatory potential in understanding the relationship difficulties that some family members experience in assuming a caregiver role for a person with SCI.

Our results emphasize the necessity to appreciate the unique and distinct processes that can influence caregiver and care recipient adjustment. At times, these dynamics may complement each other, but research indicates that persons with SCI and their family caregivers experience different problems, and their perspectives of these problems can differ considerably (Chan,

Lee, & Lieh-Mak, 2000; Elliott & Shewchuk, 2002). In the present study, for example, care recipient reports of communal behavior did not reflect the experience of their family caregivers, and the beneficial effects of communal behaviors were not observed among caregivers. Careful attention to separate reports of adjustment and relationship dynamics from the caregiver and the care recipient is warranted in future research and in clinical practice.

Several methodological limitations of this study should be noted. We did not have accurate and detailed information on the total number of potential participants approached or of those who declined to participate in our study; therefore, we cannot examine potential sample selection biases. Individuals who agreed to be in the study volunteered to participate in a clinical trial that involved random assignment to a control group or a promising intervention condition. This willingness to participate in a study of this nature likely reflects personal characteristics that can bias clinical trial research, generally, and it likely reflects a small percentage of individuals who are interested in participating in a psychological intervention (Tucker & Roth, 2006). We do not know the impact of this bias on our research.

There are also some possible weaknesses about the MCBS. The instructional time frame may have caused inconsistent perceptions among the respondents who had lived with SCI for an extended period of time. In addition, it is possible that the construct on which this instrument is based may be too narrow or limited to account for the relationships with life satisfaction and depression. Further research with this scale could examine rewording of the instructional set to capture a more recent display of communal behavior between members of dyads who have lived with SCI for some time.

The current study underscores the limited nature of individual perspectives in dyadic adjustment. Of all the self-report variables measured among caregivers and care recipients, only life satisfaction scores were significantly correlated between the two groups. Caregivers and care recipients have very different perspectives about their relationship. Although it appears that they share a general sense of well-being (and satisfaction with life has been found to be higher among married individuals living with SCI than among those who are single; Putzke, Elliott, & Richards, 2001), their experience of distress may not be shared with the other. Alternatively, we did not measure dyadic adjustment, and other research indicates that dyadic adjustment is related to caregiver and care recipient depression and well-being (among spouses; Chan et al. 2000). Finally, trends noted in our post hoc analyses suggest that different mechanisms may operate among caregiver–care recipient spouses than among nonspouses, and future research should consider these factors in theoretical explanations of caregiver–care recipient adjustment.

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Figure 1.
A priori model of caregivers' and care recipients' communal behaviors and their psychological adjustment.

Figure 2.
Best fit model of mutual communal behaviors and care recipient adjustment in 61 couples.
* $p < .05$.

Table 1
Means, Standard Deviations, and Correlations Among Variables Used in Regression Analyses (N = 61)

Variable	1	2	3	4	5	6	7	8	9	10	11	M	SD
1. CG sex	—	—	—	—	—	—	—	—	—	—	—	0.89	0.321
2. CG age		—	—	—	—	—	—	—	—	—	—	48.57	15.260
3. Educational status			—	—	—	—	—	—	—	—	—	12.08	2.848
4. CG IDD				—	—	—	—	—	—	—	—	10.08	9.578
5. CG SWL					—	—	—	—	—	—	—	21.77	8.829
6. CG MCBS						—	—	—	—	—	—	32.59	5.863
7. CR sex							—	—	—	—	—	0.34	0.479
8. CR age								—	—	—	—	40.85	16.740
9. CR IDD									—	—	—	13.57	11.322
10. CR SWL										—	—	19.02	8.215
11. CR MCBS											—	34.74	5.049

Note. CG = caregiver; IDD = Inventory of Diagnosis of Depression; SWL = Satisfaction With Life; MCBS = Mutual Communal Behaviors Scale; CR = care recipient.

* $p < .05$.