

NIH Public Access

Author Manuscript

West J Nurs Res. Author manuscript; available in PMC 2010 May 4.

Published in final edited form as:

West J Nurs Res. 2007 December ; 29(8): 976-992. doi:10.1177/0193945907303086.

Marital Quality in the Context of Mild Cognitive Impairment

Linda Garand, Mary Amanda Dew, Bridget Urda, Jennifer Hagerty Lingler, Steven T. DeKosky, and Charles F. Reynolds III

The University of Pittsburgh, Pennsylvania

Abstract

The behavioral changes in people with dementia often negatively affect marital relationships. Yet little is known about how the marital relationship is affected when the care recipient has mild cognitive impairment (MCI). This study characterizes marital quality among adults who live with a spouse with MCI. Data were drawn from interviews with 27 spouses of people with a recent diagnosis of MCI. Even at early stages of MCI, many spouses report the frequent occurrence of distressing behaviors. This study demonstrates that MCI may degrade the quality of the marital relationship. These results have implications for clinical practice and the delivery of health care and social services to these families. It is important to develop interventions to address the needs of these individuals and their caregivers. Results of this study suggest the need for mental health interventions designed to preserve the quality of these marital relationships.

Keywords

mild cognitive impairment; caregiving stressors; marital quality

As cognitive abilities decline in people with dementia, the marital relationship is affected. When one spouse has dementia, the quality of the relationship and the level of intimacy tend to deteriorate (Fearon, Donaldson, & Burns, 1998; Morris, Morris, & Britton, 1988; Wright, 1991), communication becomes difficult, and enjoyment of each other's companionship and reciprocity diminish (Gallagher-Thompson, Dal Canto, Jacob, & Thompson, 2001; Wright, 1991). These changes in the marital relationship have a negative impact on caregiving burden and symptoms of depression reported by spousal caregivers (Chelsa, Martinson, & Muwaswes, 1994; Donaldson, Tarrier, & Burns, 1998; Draper & Poulos, 1995; Lawrence, Tennstedt, & Assmann, 1998). Conversely, higher levels of mutuality—a construct that encompasses reciprocity in the relationship, feelings of closeness, and shared values and everyday pleasures —have been found to mitigate caregiver role strain and stress (Archbold, Stewart, Greenlick, & Harvath, 1990).

Studies overwhelmingly have shown that it is not so much the level of cognitive impairment in people with dementia, but rather the behavioral manifestations of that impairment that are key sources of caregiver distress (Baumgarten et al., 1992; Hinrichsen & Niederehe, 1994; Ingersoll-Dayton & Raschick, 2004; Pinquart & Sorensen, 2003; Schulz, O'Brien, Bookwala, & Fleissner, 1995; Seltzer & Li, 1996). Such symptoms also have the potential to alter a spousal caregiver's feelings about the changing marital relationship itself (Fearon et al., 1998; Gallagher-Thompson et al., 2001; Morris et al., 1988; Wright, 1991). Whether these behavioral changes become evident only when dementia is diagnosable, or whether they begin at earlier stages of cognitive impairment, is currently under investigation (Garand, Dew, Eazor, DeKosky, & Reynolds, 2005). Because population-based studies have shown that people with mild cognitive impairment (MCI) exhibit a high prevalence of neuropsychiatric symptoms such as depression or agitation (Lyketsos et al., 2002), we sought to determine the extent to which behavioral symptoms of cognitive impairment in individuals with MCI are associated with

their spouses' perception of the quality of the marital relationship. Evidence of such a relationship could point to a need for psychoeducational or behavioral interventions designed to preserve the quality of the marital relationship when one member demonstrates declining cognitive capabilities and associated behaviors.

Marriage and the Strain of Chronic Illness

Cross-disciplinary literature has documented the complex relationship between marital quality and chronic illness. One line of inquiry has focused on the related hypotheses that (a) married individuals live longer, healthier lives; and (b) when illness does occur, high premorbid marital quality tends to buffer the stress of chronic illness (see, for example, Bookwala, 2005; Gallo et al., 2003; Lillard & Panis, 1996; Rutledge, Matthews, Lui, Stone, & Cauley, 2003; Troxel, Matthews, Gallo, & Kuller, 2005; Uchino, Keicolt-Glaser, & Cacioppo, 1994; Wyke & Ford, 1992). Other researchers have conceptualized the quality of the marital relationship as an outcome in and of itself, positing that the burden of chronic illness poses a threat to marital quality, particularly when one spouse assumes primary responsibility for the informal care of the other. Studies grounded in this approach have linked greater illness demands to diminished marital closeness, increased relational strain, and more negative perceptions of overall marital quality (Lewis, Woods, Hough, & Bensley, 1989; Speziale, 1997).

The latter approach is particularly relevant to degenerative illnesses, such as dementia, which often yield a multifaceted constellation of "illness demands." Over time, individuals affected by progressively worsening cognitive impairment typically require continuous behavioral supervision as well as substantial assistance with instrumental and basic activities of daily living, contributing to high levels of distress and perceived burden among spousal caregivers (Pinquart & Sorensen, 2003; Schulz et al., 1995). Such common manifestations of dementia, as impaired insight and changes in behavior and personality, hold clear potential to alter the quality of marital dynamics. Although numerous studies have found dementia related behavioral symptoms to be among the most robust predictors of negative stress outcomes for family caregivers (Baumgarten et al., 1992; Hinrichsen & Niederehe, 1994; Ingersoll-Dayton & Raschick, 2004; Pinquart & Sorensen, 2003; Schulz et al., 1995; Seltzer & Li, 1996), studies relating dementia symptom profiles to marital quality have been limited.

For example, a study of 53 dementia spousal dyads found that behavioral symptoms in the spouse with dementia were associated with deterioration in the quality of the marital relationship, independent of the patient's cognitive and functional symptom profiles (de Vugt et al., 2003). Focusing exclusively on verbal behaviors, a naturalistic comparison of 27 wives caring for moderately impaired husbands with probable Alzheimer's disease (AD) to 27 noncaregiving wives from comparable sociodemographic backgrounds, found AD to negatively impact marital communication patterns, with noncaregiving dyads engaging in more overall talk, and in more supportive talk, than caregiving couples (Gallagher-Thompson et al., 2001). Among caregiving wives, Gallagher-Thompson et al. found less reciprocity and fewer shared pleasures as compared to noncaregivers, and these dimensions of mutuality were inversely correlated with depressive symptoms. Studies such as these have provided preliminary evidence for the profound changes in marital dynamics that dementia portends. Yet data on marital quality in the context of less advanced cognitive impairment (i.e., at the beginning stages of the dementia trajectory) are lacking.

Purpose

This study was designed to identify and characterize correlates of marital quality among cognitively intact older adults living with a spouse with MCI. Furthermore, we sought to determine if behavioral manifestations of MCI bear their own unique associations with the quality of the marital relationship, independent of the contribution of other potential correlates

of marital quality. Such research has potential to help us understand if behavioral changes affect quality of the marital dynamics among spousal caregivers of individuals with relatively mild forms of cognitive impairment. With estimates suggesting that the number of people with dementia will double over the next 30 years (Evans, 1990), this information will be useful when developing and evaluating interventions designed to preserve mental health of spousal caregivers.

Method

Design

This study used a cross-sectional, descriptive correlational design.

Sample

We focused on married couples in which one spouse received diagnosis of MCI, a proposed dementia precursor syndrome, from the University of Pittsburgh Alzheimer's Disease Research Center (ADRC). In brief, MCI refers to cognitive impairment that exceeds expectations for age and education level, and occurs among otherwise well-functioning older adults (Petersen et al., 1999, 2001). Two forms of MCI diagnosed at the ADRC are MCI-amnestic and MCIother (or MIC-multiple cognitive domains). MCI-amnestic is diagnosed when the three following criteria are met: (a) the presence of impairments (defined as performance >1.5 SD below normative levels) in delayed recall of verbal material, nonverbal materials, or both; (b) evidence that these cognitive deficits represent a decline from previous level of functioning; and (c) all other areas of function fall within normal limits for age and education. The second type, MCI-other, is diagnosed similarly except that for the first criterion—impairment in at least one cognitive domain other than memory, or one abnormal test (which could be a memory test) in at least two domains (defined as performance >1.5 SD below normative levels) is required. For example, individuals diagnosed as having MCI-other can have an isolated language deficit or one abnormal memory test with an abnormal visuoconstructional test. These diagnoses (MCI-amnestic and MCI-other) do not exclude individuals with mild deficits of instrumental activities of daily living. Individuals are diagnosed with probable MCI-amnestic or MCI-other once the absence of psychiatric, neurological (e.g., cerebrovascular disease, history of head trauma encephalopathy, infectious diseases, and developmental disabilities), or systemic illnesses that may cause cognitive deficits is determined. Furthermore, the diagnosis of MCI is done by an adjudication committee that examines the cognitive, neuropsychological, neurological, psychiatric, and systemic (physical) information (Lopez et al., 2006).

Eligible respondents were spouses of individuals recently diagnosed (within 6 months of data collection) with either (a) probable MCI-amnestic or (b) MCI-other. All respondents were recruited from the ADRC patient and informant research registry. We enrolled all spouses (or unmarried cohabitating partners) of community residing (noninstitutionalized) individuals who had been diagnosed with MCI up to 6 months prior to study inception. The 6-month timeframe was established to minimize the possibility of interviewing spouses of people who had progressed to a state of clinical dementia.

Over a 13-month timeframe (including the 6 months prior to study startup), 41 people met the criteria for MCI as assigned by ADRC Diagnostic Consensus Conferences. Of those, 20% (n = 8) did not have a spouse or partner, and 14% (n = 6 spouses) refused to participate. Reasons for refusal included time constraints (n = 4) and sole interest in pharmacotherapy studies for the spouse with MCI (n = 2). Thus, a total of 27 spouses of people with consensus-based diagnoses of MCI provided the data.

Respondents were predominantly cognitively intact, educated, Caucasian, women, and married for almost 5 decades (see Table 1). Although the average age of the sample was 70 years, slightly more than one half of the sample continued to work outside of the home. As expected, individuals with MCI had demographic characteristics very similar to their spouses. Respondent characteristics did not vary as a function of the type of MCI diagnosed in their spouse (e.g., amnestic MCI vs. other-MCI).

Procedure

During the regularly scheduled discussion of outcomes of the ADRC diagnostic evaluation, the social worker asked potential respondents if they were willing to be interviewed about their role as a spouse of a person with MCI. Once written informed consent was given, data were gathered by one trained research associate during a single interview (vs. self-administered scales) in the respondent's home. This strategy minimized respondent burden while enhancing the quality of the data obtained. Respondents received a small honorarium (\$25) for their time. Information regarding the cognitively impaired spouse's status at the time of diagnosis was gathered from the ADRC medical records.

Measures

Self-report measures were used to assess key areas of the respondent's perception of the marriage and MCI-related behaviors in the spouse with MCI. In addition, covariates likely to be related to perceptions in these areas were assessed.

Marital quality—The quality of the marital relationship was evaluated using the Dyadic Adjustment Scale (Spanier, 1976). The Dyadic Adjustment Scale is a 32-item, self-report measure of marital adjustment, consisting of four subscales: marital satisfaction (the degree to which the respondent is satisfied with the present state of the relationship and is committed to its continuance), marital cohesion (the degree to which the respondent engages in activities with his or her partner), marital consensus (the degree to which respondent feels the couple agrees on matters of importance), and affectional expression (the degree to which the relationship). Internal consistency in this sample (as measured by Cronbach's alpha) was .83, .74, .93, and .68 for the four subscales, respectively. These reliability figures are similar to those reported by Spanier (1976); higher scores indicate higher levels of marital quality. Although the four subscales of the Dyadic Adjustment Scale were intercorrelated (Median Pearson's r = .66), results presented next show that the subscales differed from each other in their pattern of correlations with other variables, indicating the importance of considering each of the subscales separately.

MCI-related behaviors—Respondents reported on their spouse's MCI-related behaviors with the Memory and Behavior Problem Checklist (MBPC; Zarit & Zarit, 1987). The MBPC inquires about the frequency and distress level associated with 30 behaviors commonly exhibited by individuals with dementia. Item responses on the frequency component of the MBPC were rated on a 6-point scale ranging from 0 (*never occurred to*) to 5 (*occurs daily or more often*). Respondents also noted how much each specific behavior "bothered or upset" them on a 5-point scale ranging from 0 (*not at all*) to 4 (*extremely*). Eighteen of the listed behaviors (e.g., waking you up at night, being suspicious or accusative) were rarely endorsed by respondents (i.e., >4 respondents or 14.8% of the sample) and these were not considered further in the analyses. For each remaining behavior, we created a three-level, frequency-distress index to indicate burdensome behaviors; scored as 1 (*behavior occurred less than weekly*), 2 (*behavior occurred at least weekly and was not at all to moderately upsetting*), and 3 (*behavior occurred at least weekly and was very to extremely upsetting*).

Covariates related to perceptions of marital quality and MCI-related behaviors -We considered standard demographic information (age, gender, level of education, employment status, income, and length of marriage) and two measures of caregiving burden as potentially important covariates to examine and control in key analyses. First, objective caregiving burden was addressed with an 11-item checklist, in which respondents indicated which of 11 household and personal management tasks (e.g., preparing meals, running errands) they regularly performed for their spouse. This set of items was adapted from the task burden list of Montgomery, Gonyea, and Hooyman (1985). The total number of tasks performed was summed. Second, subjective caregiving burden was assessed with a 13-item Subjective Caregiving Burden Scale (Zarit, Reever, & Bach-Peterson, 1980), which measures respondents' perceptions of the caregiving role (e.g., "I feel it is painful to watch my spouse develop memory problems" and "I feel that giving help to my spouse has enabled me to learn new skills") with responses ranging from 1 (never) to 5 (almost always). The reliability alpha of this index was adequate only after eliminating one item ("I feel that I don't do as much for my spouse as I could or should"). The remaining 12 items were therefore averaged to create a subjective caregiving burden index ($\alpha = .85$). Higher scores indicate higher subjective caregiving burden.

Analyses

The primary aim of this study was to identify and characterize correlates of marital quality among cognitively intact, older adults who live with a spouse with MCI. Thus, we initially performed simple descriptive analyses of the study variables. Next, product-moment correlation coefficients (Pearson's *r*) were computed to determine the direction and the strength of associations between the respondents' perceptions of the marital relationship and the 12 MCI-related behavior indexes. Correlations between the marital relationship subscales and potential correlates (e.g., demographic and caregiving burden variables) were also computed. Finally, for each of the marital quality subscales, linear regression analyses were performed to examine whether MCI-related behaviors were associated with marital quality scores after controlling for important correlates. Given the limited sample size, we used a conservative strategy of including variables in the regression analyses only if they showed a moderate to large bivariate association ($r \ge .40$) with a given marital relationship variable (Cohen, 1988). Variable distributions were evaluated for normality prior to bivariate and multivariate analyses.

Results

Descriptive information for marital quality subscales, ratings of MCI behavioral stressors and caregiver burden variables are presented in Table 2. In general, the sample scored above the midpoint on each of the marital quality subscales. With regard to the MCI-related behaviors, "asking the same question over and over," "losing or misplacing things," and "trouble remembering recent events" received the highest frequency-distress rating, indicating that they occurred relatively frequently and were distressing when they occurred. Table 2 also provides descriptive data on caregiver burden; mean scores were slightly below the midpoint on each of the two caregiving burden measures.

Associations Among Marital Quality, MCI-Related Behaviors, and Potential Covariates

Table 3 shows correlations among key variables. Higher frequency-distress ratings for MCIrelated behaviors in the areas of "asking the same question over and over," "trouble remembering recent events," "follows you around," "talking little or not at all," and "becoming angry" were associated with significantly lower marital satisfaction. Similarly, "talking little or not at all" and "appears sad or depressed" were negatively associated with marital cohesion scores. "Talking little or not at all" was also negatively associated with both marital consensus and affectional expression scores. Among the potential covariates, older respondents reported

significantly poorer perceptions of all areas of their marriage, except consensus, and greater subjective caregiver burden was significantly associated with both reduced marital satisfaction and consensus scores.

Demographic Variables, Caregiving Burden, and MCI-Related Behaviors to Marital Quality

To determine whether correlations among the MCI-related behaviors and various measures of marital quality were independent of significant covariates, a separate linear regression analysis was performed for each of the marital quality indexes using a hierarchical approach in which variables were entered sequentially in two blocks (Tacachnick & Fidell, 2001). In each regression analysis, the first block included age and the caregiving burden variables that were significantly associated with the specific index of marital quality. The second block included the MCI-related behavioral stressors that were significantly associated with specific measures of marital quality.

In general, MCI-related behavioral stressors significantly contributed to the sample's marital satisfaction, consensus, and affectional expression scores, after controlling for the effects of age and subjective caregiver burden (where indicated, see Table 4). Specifically, "asking the same questions over and over" and "talking little or not at all" remain significantly associated with marital satisfaction scores after controlling for other variables. Similarly, "talking little or not at all" remained a significant correlate of marital cohesion and affectional expression scores. Yet after controlling for the effects of age, neither "talking little or not at all" nor "appears sad or depressed" contributed significantly to the marital cohesion scores.

Discussion

To our knowledge, this is the first study to examine correlates of marital quality among spouses of people with a diagnosis of MCI. Such research has potential to contribute substantially to our understanding of when (i.e., at what point in the caregiving trajectory) behavioral changes begin to affect the quality of the marital dynamics among spousal caregivers of individuals with cognitive impairment. The findings have implications for broadening our understanding of the constellation of behavioral stressors experienced by spouses, even at the earliest stages of the partner's cognitive impairment.

Results show that a variety of behaviors exhibited as part of this impairment are both frequently occurring and distressing to spousal caregivers. These frequently occurring behaviors, many of which directly reflect disturbed elements of communication, are significantly linked to perceptions of marital quality among spouses of people with MCI. Specifically, when a person with MCI talks little or not at all, the spouse reports lower ratings of marital satisfaction (i.e., the degree to which the respondent is satisfied with the present state of the relationship and is committed to its continuance), consensus (i.e., the degree to which respondent feels the couple agrees on matters of importance), and affectional expression (i.e., the degree to which the respondent is satisfied with the expression of affection and sex in the relationship). Repeating questions is also associated with lowered marital satisfaction. Marital cohesion (i.e., the degree to which the respondent engages in activities with his or her partner) appears to be resistant to these same communication problems at this level of cognitive impairment. It is note-worthy that marital satisfaction is related to the greatest number of behavioral areas, whereas the remaining areas of marital quality are each uniquely related to only one or two specific behaviors in the spouse with MCI. This pattern of findings may have arisen because marital satisfaction appears to be the most global indicator of marital quality, whereas the remaining components assessed by our measure seem more narrow and specific.

These findings show that behaviors indicative of MCI are distressing for spouses and pose a threat to marital quality. Prior research focusing on more impaired populations has found that

greater illness demands and objective caregiver burden are linked to more negative perceptions of overall marital quality (Lewis et al., 1989; Speziale, 1997). We did not find that marital quality was significantly related to objective caregiver burden in our sample of spouses to people with MCI. However, higher subjective caregiving burden (which reflected the respondents' perceptions of the caregiving role) was significantly associated with poorer marital quality in our sample, even at the multivariate level. Beyond the impact of elements of caregiving burden per se, behaviors related to disturbed communication in the spouse with MCI bore their own unique and important relation to negative perceptions of marital quality.

What could account for these findings, especially at such an early, mild stage of cognitive deficits? Spouses of these individuals, who may have long provided daily reciprocal support and advice to their spouse, may experience significant emotional upheaval as their marital interactions shift to encompass a caregiver and care-recipient dynamic. Previous analyses of our sample show that these spouses have already begun to experience heightened psychological distress in association with elevated levels of caregiving burden (Garand et al., 2005). Our study, together with those earlier results, suggests that frequently occurring and distressing behaviors in the person with MCI not only undermine the psychological well-being of the cognitively intact spouse but may fundamentally alter the nature of the marital relationship. It is conceivable that relationships outside of the marital relationship could be affected as well, including interactions in the workplace, with other family members, and with friends.

Most important, this study suggests that specific frequently occurring and bothersome MCIrelated behaviors are associated with marital quality in caregivers. Findings suggest need for development and evaluation of mental health interventions designed to strengthen positive aspects of the marriage (likely the most important relationship) and other key relationships when an individual is diagnosed with MCI. Such interventions have the potential to improve the quality of the marital relationship for both the individual with MCI and his or her spousal caregivers.

Limitations

Several limitations of this study must be considered. First, size and composition of the sample introduced potential limitations on generalizability to the population of spousal MCI caregivers. Our small sample was predominantly White, and the respondents were mostly women. Such characteristics reflect the population of MCI patients and spouses in the ADRC research registry and the gender distribution is similar to that found in large population-based studies in which approximately 72% of caregivers are women (Stone, Cafferata, & Sangl, 1987). Although the registry may include fewer non-White patients than the percentage of non-Whites in the U.S. population, recruitment of participants from the ADRC research registry enhanced the study's internal validity by ensuring that the patients were carefully diagnosed with MCI (e.g., by multidisciplinary consensus). Conversely, such recruitment strategies potentially limit the external validity of the results because such individuals (i.e., spouses of individuals who have not sought a clinical diagnosis and treatment for their memory complaints) may differ from those who have not sought treatment from a specialty clinic. Second, our study's cross-sectional design limits conclusions regarding the causal or predictive direction of the relationships described. It is possible that the associations we observed, despite having controlled for other known correlates of marital quality in the sample, were influenced by other underlying characteristics of respondents. Moreover, the fact that we controlled for other correlates could be viewed as a limitation. Specifically, although most of our regression analyses includes three or fewer independent variables (including background covariates), the analyses for marital satisfaction includes a total of seven variables. This is a large number of variables given our sample size. Yet, if we had not controlled for background factors of age and caregiver burden in an effort to reduce the number of independent variables, we feel that

the issue of the unique correlation of behaviors and marital quality would have been poorly addressed. Our dilemma here can only be resolved by the inclusion of a larger sample size in future work. It is also important in future work to include more heterogeneous samples, as well as to longitudinally examine these relationships to more fully characterize the nature and direction of effects.

Conclusion

Results of this study show that at early stages of cognitive impairment, many spouses of people with MCI report frequent occurrence of behaviors that they perceive as distressing in their spouse. The occurrence of these behaviors, particularly those related to disturbed communication in the person with MCI, was associated with more negative perceptions of marital quality among their spouses, even after controlling for perceptions of caregiving burden. These finding have clinical implications for these patients and their spouses. Given projections that the number of individuals affected by cognitive impairment will double over the next 30 years (Evans, 1990), results of this study show that it will be increasingly important to develop and evaluate interventions designed to preserve the quality of the marital relationship, as one member's cognitive capabilities and behaviors may be changing.

Acknowledgments

This work was supported by the University of Pittsburgh Alzheimer's Disease Research Center (P50 AG05133) and grants from the National Institute of Mental Health (P30 MH52247, P30 MH71544, T32 MH19986, and R25 MH60473). Contributions of coauthors were as follows: Linda Garand, data collection, analysis, and interpretation, and manuscript development; Bridget Urda, data cleaning, literature searches, and manuscript development; Jennifer Hagerty Lingler, data interpretation and manuscript development; Charles F. Reynolds III, data interpretation and manuscript development; Steven T. DeKosky, data interpretation and manuscript development; and Mary Amanda Dew, statistical analyses, data interpretation, and manuscript development.

References

- Archbold PG, Stewart BJ, Greenlick MR, Harvath T. Mutuality and preparedness as predictors of caregiver role strain. Research in Nursing and Health 1990;13:375–384. [PubMed: 2270302]
- Baumgarten M, Battista RN, Infante-Rivard C, Hanley JA, Becker R, Gauthier S. The psychological and physical health of family members caring for an elderly person with dementia. Journal of Clinical Epidemiology 1992;45:61–70. [PubMed: 1738013]
- Bookwala J. The role of marital quality in physical health during the mature years. Journal of Aging & Health 2005;17(1):85–104. [PubMed: 15601785]
- Chelsa C, Martinson I, Muwaswes M. Continuities and discontinuities in family members' relationships with Alzheimer's patients. Caregiving Relations 1994;43:3–9.
- Cohen, J. Statistical power analysis for the behavioral sciences. Hilldale, NJ: Lawrence Erlbaum; 1988.
- de Vugt ME, Stevens F, Aalten P, Lousberg R, Jaspers N, Winkens I, et al. Behavioural disturbances in dementia patients and quality of the marital relationship. International Journal of Geriatric Psychiatry 2003;18(2):149–154. [PubMed: 12571824]
- Donaldson C, Tarrier N, Burns A. Determinants of caregiver stress in Alzheimer's disease. International Journal of Geriatric Psychiatry 1998;134:248–256. [PubMed: 9646153]
- Draper BM, Poulos CJ. Risk factors for stress in elderly caregivers. International Journal of Geriatric Psychiatry 1995;11:227–231.
- Evans DA. Estimated prevalence of Alzheimer's disease in the United States. Milbank Quarterly 1990;68 (2):267–289. [PubMed: 2233632]
- Fearon M, Donaldson C, Burns A. Intimacy as a determinant of expressed emotion in caregivers of people with Alzheimer's disease. Psychological Medicine 1998;28(5):1085–1090. [PubMed: 9794015]
- Gallagher-Thompson D, Dal Canto PG, Jacob T, Thompson LW. A comparison of marital interaction patterns between couples in which the husband does or does not have Alzheimer's disease. Journal of Gerontology: Social Sciences 2001;56B(3):S140–S150.

- Gallo LC, Troxel WM, Kuller LH, Sutton-Tyrrell K, Edmundowicz D, Matthews KA. Marital status, marital quality, and atherosclerotic burden in postmenopausal women. Psychosomatic Medicine 2003;65(6):952–962. [PubMed: 14645772]
- Garand L, Dew MA, Eazor LR, DeKosky ST, Reynolds CF. Caregiver burden and psychiatric morbidity in spouses of persons with mild cognitive impairment. International Journal of Geriatric Psychiatry 2005;20:512–522. [PubMed: 15920711]
- Hinrichsen GA, Niederehe G. Dementia management strategies and adjustment of family members of older patients. The Gerontologist 1994;34:95–102. [PubMed: 8150316]
- Ingersoll-Dayton B, Raschick M. The relationship between care-recipient behaviors and spousal caregiving stress. The Gerontologist 2004;44(3):318–327. [PubMed: 15197286]
- Lawrence RH, Tennstedt SL, Assmann SF. Quality of the caregiver. Care recipient relationship: Does it offset negative consequences of caregiving for family caregivers? Psychological Aging 1998;13(1): 150–158.
- Lewis FM, Woods NF, Hough EE, Bensley LS. The family's functioning with chronic illness in the mother: The spouse's perspective. Social Science and Medicine 1989;29:1261–1269. [PubMed: 2609200]
- Lillard LA, Panis CW. Marital status and mortality: The role of health. Demography 1996;33(3):313–327. [PubMed: 8875065]
- Lopez OL, Becker JT, Jagust WJ, Fitzpatrick A, Carlson MC, DeKosky ST, et al. Neuropsychological characteristics of mild cognitive impairment subgroups. Journal of Neurology, Neurosurgery, and Psychiatry 2006;77:159–165.
- Lyketsos CG, Lopez O, Jones B, Fitzpatric AL, Breitner J, DeKosky S. Prevalence of neuropsychiatric symptoms in dementia and mild cognitive impairment: Results from the cardiovascular health study. Journal of the American Medical Association 2002;288(12):1475–1483. [PubMed: 12243634]
- Montgomery RJV, Gonyea JG, Hooyman NR. Caregiving and the experience of subjective and objective burden. Family Relations 1985;34:19–26.
- Morris LW, Morris RG, Britton PG. The relationship between marital intimacy and perceived strain and depression in spouse caregivers of dementia sufferers. British Journal of Medical Psychology 1988;61:231–236. [PubMed: 3179245]
- Petersen RC, Smith GE, Waring SC, Ivnik RJ, Tangalos EG, Kokmen E. Mild cognitive impairment: Clinical characterization and outcome. Archives of Neurology 1999;56(3):303–308. [PubMed: 10190820]
- Petersen RC, Stevens JC, Ganguli M, Tangalos EG, Cummings JL, DeKosky ST. Practice parameter: Early detection of dementia: Mild cognitive impairment (an evidence-based review). Neurology 2001;56(9):1133–1142. [PubMed: 11342677]
- Pinquart M, Sorensen S. Associations of stressors and uplifts of caregiving with caregiver burden and depressive mood: A meta-analysis. Journals of Gerontology: Psychological Sciences 2003;58B(2): 112–128.
- Rutledge T, Matthews K, Lui LY, Stone KL, Cauley JA. Social networks and marital status predict mortality in older women: Prospective evidence from the study of osteoporotic fractures (SOF). Psychosomatic Medicine 2003;65(4):688–694. [PubMed: 12883123]
- Schulz R, O'Brien AT, Bookwala J, Fleissner K. Psychiatric and physical morbidity effects of dementia caregiving: Prevalence, correlates, and causes. The Gerontologist 1995;35(6):771–791. [PubMed: 8557205]
- Seltzer MM, Li LW. The transitions of caregiving: Subjective and objective definitions. The Gerontologist 1996;36(5):614–626. [PubMed: 8942105]
- Spanier GB. Measuring dyadic adjustment: New scales for assessing the quality of marriage and similar dyads. Journal of Marriage and the Family 1976;38:15–38.
- Speziale BA. Couples, sexual intimacy, and multiple sclerosis. Journal of Family Psychotherapy 1997;8:13–32.
- Stone R, Cafferata GL, Sangl J. Caregivers of the frail elderly: A national profile. The Gerontologist 1987;27(5):616–626. [PubMed: 2960595]
- Tacachnick, BG.; Fidell, LS. Using multivariate statistics. 4th ed.. Boston: Allyn & Bacon; 2001.

- Troxel WM, Matthews KA, Gallo LC, Kuller LH. Marital quality and occurrence of the metabolic syndrome in women. Archives of Internal Medicine 2005;165(9):1022–1027. [PubMed: 15883241]
- Uchino BN, Keicolt-Glaser JK, Cacioppo JT. Construals of preillness relationship quality predict cardiovascular response in family caregivers of Alzheimer's disease victims. Psychology and Aging 1994;9(1):113–120. [PubMed: 8185858]
- Wright LK. The impact of Alzheimer's disease on the marital relationship. Gerontologist 1991;31(2): 224–237. [PubMed: 2044995]
- Wyke S, Ford G. Competing explanations for associations between marital status and health. Social Science and Medicine 1992;34:523–532. [PubMed: 1604359]
- Zarit SH, Reever K, Bach-Peterson J. Relatives of the impaired elderly: Correlates and feelings of burden. The Gerontologist 1980;20(6):649–655. [PubMed: 7203086]
- Zarit, SH.; Zarit, KE. The memory and behavior problems checklist: 1987R. University Park: Pennsylvania State University; 1987.

Table 1

Sample Characteristics (n = 27)

Respondent Characteristics	% (n) or M ± SD of Sample
Age in years (range = 54–82)	70.7 ± 7.6
Sex, % women	85.2 (23)
Race, % Caucasian	92.6 (25)
MMSE score (range = 28–30)	29.7 ± 0.5
\geq High school education	77.7 (21)
Years in relationship (range = $11-58$)	44.3 ± 11.4
Employed outside home	51.8 (14)
Income \geq \$30,000 per year	70.3 (19) ^a
Characteristics of the Spouse with MCI	
Age in years (range = 59–87)	73.8 ± 7.0
Sex, % men	85.2 (23)
Race, % Caucasian	85.2 (23)
\geq High school education	70.3 (19)
Employed outside home	7.4 (2)
Amnestic MCI diagnosis	44.4 (12)

Note: MMSE = Mini Mental State Exam; MCI = mild cognitive impairment.

^{*a*}Respondent refused to give income data (n = 26) for household income.

NIH-PA Author Manuscript

Table 2

Scale Ranges and Sample Mean Scores (N = 27)

Measure	Scale Range	Sample Range	М	SD
Marital adjustment				
Marital satisfaction	0–50	19–47	38.11	5.78
Marital cohesion	0–24	6–19	13.41	3.54
Marital consensus	0–65	25-65	50.74	9.31
Affectional expression	0–12	3–12	9.85	2.01
MCI-behavioral stressors				
Asking same question over and over	1–3	1–3	2.07	0.73
Losing or misplacing things	1–3	1–3	1.96	0.89
Trouble remembering recent events	1–3	1–3	1.89	0.80
Forgetting what day it is	1–3	1–3	1.48	0.64
Spending long periods of time inactive	1–3	1–3	1.41	0.74
Appears sad or depressed	1–3	1–3	1.37	0.79
Becomes angry	1–3	1–3	1.37	0.79
Talking little or not at all	1–3	1–3	1.37	0.74
Trouble remembering significant past events	1–3	1–3	1.33	0.62
Being constantly restless or agitated	1–3	1–3	1.30	0.72
Appears anxious or worried	1–3	1–3	1.22	0.57
Follows you around	1–3	1–2	1.15	0.36
Caregiving burden				
Objective caregiver burden	0-11	0–10	4.07	2.84
Subjective caregiver burden	1–5	1.25-4.0	2.22	0.68

Note: MCI = mild cognitive impairment.

Page 13

Table 3

Pearson Correlations of Key Variables (N = 27)

				Dyadic
	Dyadic Satisfaction	Dyadic Cohesion	Dyadic Consensus	Affectional Expression
Age (years)	.40*	.40*	.33	.45*
Sex, % women (n)	38	19	24	14
Asking same question over and over	40*	.00	.00	.01
Trouble remembering recent events	41*	10	23	08
Trouble remembering significant past events	.032	03	.15	.13
Losing or misplacing things	.01	.25	16	00
Forgetting what day it is	01	09	.07	09
Follows you around	52**	23	28	34
Being constantly restless or agitated	30	05	.02	13
Spending long periods of time inactive	.10	09	02	19
Talking little or not at all	39*	41*	53**	66**
Appears sad or depressed	36	41*	06	16
Appears anxious or worried	05	16	03	04
Becomes angry	51**	14	29	30
Objective caregiving burden	14	.11	14	04
Subjective caregiving burden	67**	34	52**	36

* p < .05.

** *p* < .01 (two-tailed).

Table 4

Regression of Marital Quality on Demographic, Caregiving Burden, and Specific Mild Cognitive Impairment Related Behavioral Stressors (N = 27)

Variable	β	t	р
Marital satisfaction			
Caregiver age	.22	1.47	.153
Subjective caregiving burden	60	-3.97	.001
$R^2 = .49, F(2, 24) = 11.65, p = .000.$			
Asking the same question over and over	42	-2.77	.012
Trouble remembering recent events	12	92	.423
Follows you around	18	-1.40	.177
Talking little or not at all	36	-2.65	.016
Becomes angry	.05	.36	.721
Increment in $R^2 = .28$, $F(5, 19) = 4.77$, $p = .005$.			
Marital cohesion			
Caregiver age	.40	2.21	.036
$R^2 = .16, F(1, 25) = 4.89, p = .036.$			
Talking little or not at all	27	-1.50	.145
Appears sad or depressed	29	-1.64	.115
Increment in $R^2 = .19$, $F(2, 23) = 3.34$, p = .053.			
Marital consensus			
Caregiver age	.19	1.07	.296
Subjective caregiving burden	47	-2.64	.014
$R^2 = .31, F(2, 24) = 5.34, p = .012.$			
Talking little or not at all	39	-2.37	.027
Increment in $R^2 = .13$, $F(1, 23) = 5.60$, p = .027.			
Affectional expression			
Caregiver age	.45	2.52	.018
$R^2 = .20, F(1, 25) = 6.35, p = .018.$			
Talking little or not at all	59	-4.16	.000
Increment in $R^2 = .33$, $F(1, 24) = 17.27$, p = .000.			