The Influence of Spouse Cognitive Impairment on Respondents’ Depressive Symptoms: The Moderating Role of Marital Closeness

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An earlier report documented that, in a community-dwelling sample of 317 older married couples, cognitive impairment in a wife was associated with depressive symptoms in her husband (Moritz, Kasl, and Berkman, 1989). No similar effects were found for wives. Here we examine the extent to which marital closeness moderates the impact of a spouse's cognitive impairment, with husbands in close marriages affected more strongly than husbands in less close marriages. These effects held over 3 years. In addition, husbands became less depressed following the death of a severely impaired wife, whereas widowers whose wife had been unimpaired at baseline were more depressed. None of these effects were found for wives.

Questions raised by prior research findings concerning the impact of living with a cognitively impaired spouse on a husband or wife, analyses designed to answer those questions, and possible explanations for our findings are described in this article.

In an earlier report, Moritz, Kasl, and Berkman (1989) documented that, in a sample of 317 older, noninstitutionalized married couples who lived in the community, greater cognitive impairment in a wife was associated with increased depressive symptoms in her husband. These effects were significant even after the respondent’s education, race, financial distress, chronic health conditions, and functional disability — all potential contributors to his or her level of depressive symptoms — were statistically controlled. No similar effects on the wives were observed.

The authors explored three possible explanations for this impact, all of which had been suggested by the literature and had potentially resulted from the wife’s impairment: that the husband’s depressive symptoms were reactive to (1) increased burden of responsibilities created by the wife’s impairment, (2) low levels of shared activities with her, or (3) restricted interactions with others who might otherwise provide emotional support. To examine these hypotheses, the authors analyzed the impact of several potentially moderating variables including social isolation; perceived adequacy of financial, instrumental, and emotional support; the allocation of household responsibilities; and the extent of functional impairment in the respondent and in the spouse. Although all of these variables were indeed associated with increased cognitive impairment in one’s spouse, only perceived adequacy of financial support moderated the impact of the wife’s impairment on the husband’s depressive symptoms. Specifically, the negative impact of the wife’s cognitive impairment was stronger among those who reported relying on their children for financial support. As noted above, increased cognitive impairment in husbands was not associated with increased depressive symptoms in their wives; neither was its potentially depressive impact moderated by the sequelae of husbands’ greater cognitive impairment. With none of the three leading hypotheses supported, the authors of the earlier report reflected on their findings and concluded that, instead, “The emotional strain of witnessing and adapting to spouses’ mental, behavioral, and personality changes together with the loss of companionship and intimacy are likely to contribute to increased depressive symptoms.” (Moritz, Kasl, and Berkman, 1989, p. S25).

In other recent research we showed that depressive symptoms in one spouse contribute to those in the other; that this effect increases over time; and that it is strongly moderated by marital closeness, with close couples more affected by changes in a spouse than are less close couples (Tower and Kasl, 1995, 1996c). We argue that high levels of marital closeness might create a condition in which the effect of a spouse’s cognitive impairment would be strongest. Following the quotation above, this line of reasoning implies that the mechanism by which one’s spouse’s cognitive impairment influences the depressive symptoms of the other may be related to (1) loss of a valued resource with greater intimacy associated with greater centrality of the spouse and thus impact (Costello, 1982; Hobfoll, 1989); (2) the empathic pain of witnessing deterioration in someone one loves; (3) helplessness and hopelessness resulting from not being able to influence the deterioration and ultimate death of the spouse (Abramson, Metalsky, and Alloy, 1989; Abramson, Seligman, and Teasdale, 1978; Pagel, Becker, and Coppel, 1985); and (4) the requirements of adapting to change (Lawton et al., 1991), with changes.
in a close relationship being more demanding than changes
in a less close relationship. The last two dynamics would,
preumably, result in frustration, particularly for men whose
preferred approach to coping is active problem solving
(Pearlin and Schoolar, 1978), even into old age (Diehl,
Coyle, and Labouvie-Vief, 1998; Lutzky and Knight, 1994).
Then, the inevitable failure of active problem solving (since
deterioration and death are beyond control) results in in-
creased depressive symptoms (Pagel, Becker, and Coppel,
1985) as well as a related loss of self-efficacy, yet another
source of depressive symptoms (Beck, 1983; Blatt et al.,
1982; Blatt and Zuroff, 1992). Because men's depressive
symptoms are more likely to result from assault on self-
esteeem based on failures of effective problem-solvin behavior
than are women's (Chevron, Quinlan, and Blatt, 1978),
and because men are more likely to respond to a potentially
depressing situation with problem-focused action than are
women (Lutzky and Knight, 1994; Nolen-Hoeksema, 1987),
gender differences in the mechanisms of depression are rein-
forced when a spouse is cognitively impaired.
It is not surprising that our earlier research showed such
gender differences: the longitudinal impact of the spouse's
depressive symptoms was stronger for husbands than for
wives (Tower and Kasl, 1996c); the impact of her cognitive
impairment on his depressive symptoms was substantial,
whereas his impact on her's was not statistically significant
(Moritz, Kasl, and Berkman, 1989; see also Eagles et al.,
1987); and, in close couples, a wife's health status was
more influential than a husband's own risk factors on his
depressive symptoms, whereas the same was not true for
Because wives are more likely to experience closeness with
friends and other relations than are husbands (Lee, 1988;
Lowenthal and Haven, 1968; Tower and Kasl, 1996a) and
are more likely to accept caregiving as a natural role, reg-
ardless of their role relationship or attachment to the per-
son requiring care (Stone, Cafferata, and Sangl, 1987), we
are not arguing that their spouse's cognitive impairment
leaves them unaffected. Rather, we suggest that wives
might be affected by it through different dynamics and with
different consequences than are husbands. For example,
our own previous findings of gender differences in the dynam-
ics of our couples suggest that women take physical dis-
tress in a husband somewhat more in stride but are de-
pressed by a husband's emotional distance (Tower and
Kasl, 1996a). Here we argue that the influence of a wife's
cognitive impairment on a husband's depressive symptoms
will be moderated by closeness but that wives will not nec-
essarily be affected in the same way.
In our current expanded analyses of the data, we ask
three questions: To what extent does marital closeness
moderate the impact of the cognitive impairment of one
spouse on the depressive symptoms of the other? Is this in-
fluence stable across three years? Are effects the same for
husbands and wives? To answer these questions, we repeat
the models predicting spouse depressive symptoms that had
been carefully developed in the earlier study with two criti-
cal modifications: we add marital closeness and its interac-
tion with a spouse's cognitive impairment as independent
variables to the models and, in addition, we control for a
spouse's depressive symptoms, both because they might
confound through association with that spouse's cognitive
impairment (Lichtenberg et al., 1995; Teri and Wagner,
1992) and because they contribute directly to a spouse's
depression when a couple is close (Tower and Kasl, 1995,
1996c). As a way of extending our findings, we then ex-
plore the impact of a spouse's cognitive impairment prospect-
vively by examining its association with a respondent's de-
pressive symptoms and the moderating effect of closeness
three years after the baseline measurement of them. As be-
reavement itself is also potentially depressing (Mendes de
Leon, Kasl, and Jacobs, 1994), we control for a spouse's
death in the intervening period and examine its interaction
with cognitive impairment. We analyze all data separately
for husbands and wives in order to highlight differences in
dynamics (Kunkel and Atchley, 1995).
Methodological strengths of our report include sample
characteristics, features of data collection, and the avail-
ability of control variables. First, our couples are part of a
community-based sample. Spouses have not been selected
because one was identified as demented or as a caregiver;
therefore, biases that may be associated with such identifi-
cation are eliminated. In addition, comparisons between
couples in which a spouse is impaired and those in which a
spouse is not impaired are possible. Because of the public
health implications of our findings, this last point is particu-
larly important (Baumgarten et al., 1992; Graftstrom et al.,
1992). Second, our respondents were each interviewed in-
dividually and separately, eliminating the bias of one
spouse making attributions about another's condition (Teri
and Wagner, 1992; Zarit, 1989). Further, because a second
wave of interviews was available, we could answer ques-
tions that require prospective data. Third, controlling for
additional variables is important for two reasons: respond-
ents can become depressed by their own financial strain
(Mendes de Leon, Rapp, and Kasl, 1994), illness (Anesh-
ensel, Frerichs, and Huba, 1984), and disability (Berkman
et al., 1986). Similarly, their spouse's depressive symp-
tomatology can be a source of depressive symptoms (Tower
and Kasl, 1995, 1996c), especially if the spouse is cogni-
tively impaired (Majorovitz, 1995). In addition, education,
health, and financial comfort represent resources of a re-
spondent that can be helpful in their dealings with a cogni-
tively impaired spouse (or limiting if they are lacking), and
thus moderate the impact of the impaired spouse (Lawton
et al., 1991).

Method

Subjects and Procedure

The sample consisted of 317 community-dwelling mar-
rried couples (634 individuals) who participated in the base-
line wave of the Yale Health and Aging Project (YHAP). The
YHAP consists of 2,812 noninstitutionalized men and
women over the age of 65 who agreed to complete the 1982
interview conducted at the New Haven site for the Epi-
demiologic Studies of the Elderly (EPESE) sponsored by
the National Institute on Aging. Of those enumerated, 82
percent participated.
In our subset of married couples, husbands’ average age was 75.4; wives’ was 72.6. The couples had been married an average of 43.3 years. They lived in private age-segregated housing (23.3%), public age-segregated housing (20.1%), and in the community (56.5%). The couples are described extensively elsewhere (Moritz, Kasl, and Berkman, 1989; Tower and Kasl, 1995); the total sample is detailed by Cornoni-Huntley et al. (1993) and Berkman et al. (1986). Three years later, 242 husbands and 283 wives remained alive for the second wave of in-home interviews.

Individual interviews were conducted independently with husbands and wives in 1982 and 1985. Trained researchers followed a 75-page protocol that included questions concerning age, education, race, income, financial strain; physical, emotional, and mental health; and social support.

Measures

Financial strain. — A measure of financial strain was created by summing perceived adequacy of income for food, medical care, and monthly bills and whether respondents felt that they had money left over at the end of the month, just enough to make ends meet, or not enough money to make ends meet. This index has a stronger association with depressive symptoms than does actual income (Mendes de Leon, Rapp, and Kasl, 1994), rendering it a more powerful control variable than income. Higher scores indicate greater strain.

Chronic illness. — Respondents were asked whether a doctor had ever told them that he/she had heart disease, cancer, a stroke or brain hemorrhage, diabetes, cirrhosis or liver disease, a fractured hip, other broken bones, high blood pressure, Parkinson’s disease, or arthritis. Positive responses were summed, yielding the number of chronic illnesses experienced.

Disability. — Items querying severe disability (Katz et al., 1970), gross mobility (Rosow and Breslau, 1966), and physical performance (Nagi, 1976) were compiled into a Guttman-like scale creating a summary measure of functional disability (Berkman et al., 1986). Higher scores indicate greater disability.

Cognitive impairment. — Interviews included administration of the Short Portable Mental Status Questionnaire (SPMSQ; Pfeiffer, 1975). Scores on the SPMSQ were trichotomized into no impairment (0 or 1 error), mild impairment (2 or 3 errors), or severe impairment (4 or more errors). The SPMSQ has been found to be an effective screening device for dementia in community-based residents with 4 or more errors a cutpoint with high sensitivity and specificity (100% and 99.1% respectively; Erkinjuntti et al., 1987). Six wives and 12 husbands were unable or unwilling to complete the SPMSQ, primarily because of illness. Of wives, 196 scored as unimpaired (63.0%); 92 (29.6%) with mild impairment, and 23 with severe impairment (7.4%). Of husbands, 208 (68.2%) scored unimpaired, 71 (23.3%) as mildly impaired, and (8.5%) as severely impaired.

Depressive symptoms. — Respondents completed the Center for Epidemiologic Study of Depression Scale (CES-D; Radloff, 1977). The 20 items on the CES-D were scored from 0 to 3 and aggregated, with mean scores assigned for missing responses if at least 17 items were answered. Scores ranged from 0 to 41 in 1982 and from 0 to 54 in 1985 with higher scores indicative of greater distress. In 1985, 207 husbands and 244 wives were able to complete the CES-D.

Couple closeness. — Our measure of dyadic marital closeness categorizes couples into three groups: (1) both spouses spontaneously name the other spouse as either a confidant or source of emotional support or both (n = 95; 30.8%); (2) one spouse names the other on at least one of the items but is not named in return (n = 109, 35.7%); and (3) neither spouse names the other on either item (n = 102, 33.4%). This measure has shown discriminative effectiveness both cross-sectionally (Tower and Kasl, 1995, 1996a, 1996b) and longitudinally (Tower and Kasl, 1996c). We are aware that baseline marital closeness may have been affected already by a spouse’s cognitive impairment. However, our current study addresses closeness as it existed at the point of the 1982 interview.

Analysis

We conducted four sets of analyses based on the predictive model developed in the earlier study by Moritz, Kasl, and Berkman (1989). The first two sets examined the cross-sectional data from 1982. The last two expanded the longitudinal inquiry by adding the 1985 CES-D score as the dependent measure. All data were analyzed separately for husbands and wives.

First, we added three variables to those in the original 1982 cross-sectional models (Moritz, Kasl, and Berkman, 1989). Because of their now known influence on a respondent’s depressive symptoms (Tower and Kasl, 1995, 1996c) and their association with cognitive impairment (Lichtenberg et al., 1995; Ted and Wagner, 1992), the spouse’s depressive symptoms (i.e., CES-D score) were included as a control variable. In addition, we added the new independent variables of couple closeness and the interaction of Couple closeness X Spouse cognitive impairment. Because both couple closeness and spouse cognitive impairment are categorical variables, data were analyzed by analysis of covariance, controlling for respondent risk factors of age, education, financial strain, chronic illness, and disability. In an earlier step we had also included housing stratum, race, respondent cognitive impairment, and the spouse’s education, chronic illness, and disability, on the theory that factors associated with cognitive impairment might themselves be sources of depressive symptoms in a spouse. None of these variables contributed significant variance to the model and have been dropped from further analyses.

Second, in order to see better the differences in the dynamics of couples in the three couple closeness groups, the expanded 1982 models were tested after the sample was stratified by couple closeness. Stratification eliminated couple closeness as an independent variable and made spousal cognitive impairment into a main effect.
Third, to examine longitudinal influences, we repeated the analysis of covariance model presented in Table 2 using the 1985 CES-D score as the dependent variable. Here we included the respondent's baseline CES-D as a control variable. Further, because spousal death can itself be a source of depressive symptoms, we added it as an independent variable along with the interaction of Spousal death × Spouse cognitive impairment.

Finally, to clarify the effects seen in the above analyses, we examined the husbands’ mean 1982 and 1985 CES-D scores by level of wife cognitive impairment.

RESULTS

Distributions of Cognitive Impairment

Table 1 shows the distributions of 1982 SPMSQ scores for husbands and wives in 1982 and the frequencies of these variables for the subsets of husbands and wives who did not survive to 1985. As can be seen, spouses with the most severe impairment were more likely to be dead within three years (46.2% of the most impaired husbands and 34.8% of the most impaired wives) than were spouses with less impairment. We note that these numbers are presented for descriptive purposes only; they are not adjusted for age or other variables and thus do not reflect a survival analysis.

1982 Depressive Symptoms

Table 2 presents the mean sum of squares and its significance level for each source of variance in husbands’ and wives’ 1982 CES-D scores. For those variables that make a statistically significant contribution to the respondent’s CES-D score, the unique proportion of variance accounted for by that variable, calculated by dividing the unique sum of squares for that variable by the total sum of squares for the equation, is identified in the table as percent of unique variance. Results for husbands appear on the left side of the table; those for wives are on the right.

Husbands. — A husband’s 1982 CES-D score was significantly associated with his perceived financial strain, disability, and his wife’s depressive symptoms (see Table 2). Controlling for those potential confounders along with age, education, and husband’s chronic illness, couple closeness had a main effect on depressive symptoms, accounting for 3.8 percent of unique variance as well as a significant effect in interaction with the wife’s cognitive impairment, accounting for an additional 3.5 percent of unique variance. Husbands who were in mutually close marriages had a particularly high CES-D score when the wife was severely impaired (mean of 19.0) compared to all other groups with means of less than 7.0 (see Table 4, top portion, for the 1982 data).

When stratified analyses were run separately for the three couple closeness groups (see Table 3), data became even clearer: The impact of a wife’s cognitive impairment on her husband’s depressive symptoms was strong only in the mutually close group. For them, 5.0 percent of unique variance was associated with it.

For a stricter comparison with the earlier model, we also examined the stratified models without the inclusion of the spouse’s CES-D score and with the inclusion of her education. The effects of the husband’s own variables increased slightly in all three groups. Of greater interest, the wife’s cognitive impairment now accounted for 9.7 percent of unique variance in the CES-D scores of husbands in close couples and less than 1.0 percent of those of husbands in the other two groups (not shown).

Wives. — Consistent with the earlier findings (Moritz, Kasl, and Berkman, 1989), a wife’s CES-D score was not significantly associated with a husband’s cognitive impairment, even when couple closeness was considered (see Table 2). As anticipated, when the model was tested separately for the different closeness groups, the influence of a husband’s cognitive impairment was still not statistically significant (see Table 3). These results did not change materially when the husband’s CES-D score was eliminated.

1985 Depressive Symptoms

In examining 1985 CES-D scores, we included the respondent’s 1982 CES-D score as a covariate. In addition, because of the potentially depressive impact of bereavement, spousal death was controlled along with the interaction of spousal death and cognitive impairment. We note that 47 percent of the husbands and 35 percent of the wives who were severely impaired in 1982 were dead by the spouse’s 1985 interview (see Table 1). We do not show results of the 1985 CES-D analysis of covariance in a table, but the lower part of Table 4 shows the 1985 means for the husbands.

Husbands. — Couple closeness at baseline showed a significant impact on a husband’s depressive symptoms three years later as well as a significant interaction with a wife’s

Table 1. Frequencies of 1982 Short Portable Mental Status Questionnaire (SPMSQ) for Husbands and Wives in 1982 and 1985

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0–1 error</td>
<td>208 (65.6%)</td>
<td>37 (5.6%)</td>
<td>196 (61.8%)</td>
<td>17 (8.7%)</td>
</tr>
<tr>
<td>2–3 errors</td>
<td>71 (22.4%)</td>
<td>22 (31.0%)</td>
<td>92 (29.0%)</td>
<td>8 (8.7%)</td>
</tr>
<tr>
<td>4+ errors</td>
<td>26 (8.2%)</td>
<td>12 (46.2%)</td>
<td>23 (7.3%)</td>
<td>8 (34.8%)</td>
</tr>
<tr>
<td>Missing data</td>
<td>12 (3.8%)</td>
<td>4 (33.3%)</td>
<td>6 (1.9%)</td>
<td>1 (3.0%)</td>
</tr>
</tbody>
</table>

*Percentages in this column are the proportion of those who scored 0–1, 2–3, or 4+ errors on the SPMSQ and were dead after three years.
Table 2. Analysis of Covariance Predicting 1982 CES-D Scores by Respondent, Spouse, and Marital Variables

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Husband's CES-D</th>
<th>Wife's CES-D</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>df</td>
<td>MS</td>
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<tr>
<td>Respondent variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>75.8</td>
</tr>
<tr>
<td>Education</td>
<td>1</td>
<td>57.2</td>
</tr>
<tr>
<td>Financial strain</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>Chronic illness</td>
<td>1</td>
<td>1.3</td>
</tr>
<tr>
<td>Disability</td>
<td>1</td>
<td>351.2</td>
</tr>
<tr>
<td>Spouse variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive impairment</td>
<td>2</td>
<td>33.0</td>
</tr>
<tr>
<td>Depressive symptoms</td>
<td>1</td>
<td>397.6</td>
</tr>
<tr>
<td>Marital variables</td>
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<td></td>
</tr>
<tr>
<td>Closeness</td>
<td>2</td>
<td>246.8</td>
</tr>
<tr>
<td>Closeness X Spouse</td>
<td>4</td>
<td>115.5</td>
</tr>
<tr>
<td>Cognitive impairment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model df</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model R²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
</tr>
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</table>

Note: Models are trimmed to include only the focal independent variables and those variables that were significant (p < .05) for either spouse in the full model tested.

1This column is the unique proportion of variance attributed to the variable; that is, the sum of unique (Type III) squares for the variable divided by the total sum of squares for the equation.

Table 3. 1982 CES-D ANCOVA Models for Husbands and Wives, Stratified by Couple Closeness

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Both Name</th>
<th>One Names</th>
<th>Neither Names</th>
<th>Both Name</th>
<th>One Names</th>
<th>Neither Names</th>
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<tr>
<td>Respondent variables</td>
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<td>10</td>
<td>12</td>
<td>12.6</td>
<td>10.0</td>
<td>12.6</td>
</tr>
<tr>
<td>Age</td>
<td>1.9</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
<td>4.0*</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
</tr>
<tr>
<td>Education</td>
<td>&lt;1.0</td>
<td>2.5</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
</tr>
<tr>
<td>Financial strain</td>
<td>&lt;1.0</td>
<td>7.9**</td>
<td>6.5**</td>
<td>&lt;1.0</td>
<td>3.2+</td>
<td>6.3**</td>
</tr>
<tr>
<td>Chronic illness</td>
<td>&lt;1.0</td>
<td>1.3</td>
<td>3.3+</td>
<td>1.3</td>
<td>4.7*</td>
<td>1.5</td>
</tr>
<tr>
<td>Disability</td>
<td>&lt;1.0</td>
<td>9.1**</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
<td>2.2</td>
<td>3.3+</td>
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<tr>
<td>Spouse variables</td>
<td></td>
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<tr>
<td>Cognitive impairment</td>
<td>5.0*</td>
<td>1.2</td>
<td>1.9</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
</tr>
<tr>
<td>Depressive symptoms</td>
<td>16.7***</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
<td>12.8***</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
</tr>
<tr>
<td>Model F</td>
<td>7.6***</td>
<td>3.3**</td>
<td>2.0#</td>
<td>7.2***</td>
<td>2.2*</td>
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<tr>
<td>Model df</td>
<td>8.79</td>
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<td>8.78</td>
<td>8.81</td>
<td>8.89</td>
<td>8.85</td>
</tr>
<tr>
<td>Model R²</td>
<td>.43</td>
<td>.23</td>
<td>.17</td>
<td>.42</td>
<td>.16</td>
<td>.22</td>
</tr>
<tr>
<td>N</td>
<td>88</td>
<td>97</td>
<td>87</td>
<td>90</td>
<td>98</td>
<td>94</td>
</tr>
</tbody>
</table>

Table entries are the percent of unique variance explained by that variable, calculated by dividing the Type III Sum of Squares by the Total Sum of Squares.

*p ≤ .10; *p ≤ .05; **p ≤ .01; ***p ≤ .001.

cognitive impairment. In addition, while spousal death did not have a main effect beyond the influences of the marital variables, it did have a significant effect in interaction with spousal cognitive impairment. Because of this interaction and the interaction of couple closeness and wife cognitive impairment, we would have liked to test for a 3-way interaction of Couple closeness X Wife cognitive impairment X Wife death. This was not possible, however, because two of the cells were empty and none of those in the "wife died" condition had more than five husbands with 1985 CES-D scores. This low statistical power underscores the importance of our significant results for the two-way interactions.
4. Of note, husbands in mutually close marriages whose
husbands' cognitive impairment appears in the lower two portions of Table An examination of the 1985 CES-D means from the signifi-
cantly more depressed (mean CES-D of 18.8) than the other husbands 3 years later. In contrast husbands in mutually distant marriages whose wives had severe cognitive impairment at baseline were least depressed after 3 years (mean of 2.7). Most interesting, perhaps, is that husbands whose wives had had no impairment were least depressed (mean of 5.2) compared to those whose wives had severe impairment at baseline (mean of 13.0).

**DISCUSSION**

In summary, the husbands in our study were affected by cognitive impairment in their wives by showing higher levels of depressive symptoms. This effect was strongest in those husbands who were in mutually close marriages, and it persisted over a 3-year period. Further, if a wife had been severely impaired and died within the 3 years, the husband became less depressed, whereas if she had been unimpaired, the husband showed higher levels of depression following her death. None of our analyses showed a similar impact of husband's impairment on their wives. First, we discuss the moderation of the impact of a wife's cognitive impairment by marital closeness. Next, we address the persistence of the moderating effect over 3 years, net of the baseline effects. Third, we consider the impact of the interaction of the wife's level of cognitive impairment and her survival over 3 years. Fourth, we discuss the gender differences in our findings. We close with a few final remarks concerning the dynamics of depressive experience revealed by our study.

**Influences of a spouse's cognitive impairment and the moderating effect of marital closeness.** In addition to a spouse having special needs associated with his or her own aging, he or she must respond to specific qualities associated with the mate and with the marital relationship. A spouse's cognitive impairment alters the relationship in multiple ways. Other studies have explored effects of the burdens of caregiving (George and Gwyther, 1986; Lawton et al., 1991); the satisfactions of caregiving (Lawton et al., 1991; Rapp, 1996); social isolation (Grafstrom et al., 1992; Moritz, Kasl, and Berkman, 1989); decreases in shared activities (George and Gwyther, 1986; Moritz, Kasl, and Berkman, 1989); and in access to other sources of social support (George and Gwyther, 1986; Moritz, Kasl, and Berkman, 1989). Three additional qualities of the relationship that are influenced by cognitive impairment and are particularly important in influencing one spouse's response to impairment in the other are perceptions of the other spouse as a resource, potential closeness in the relationship, and the meaning of dependency.

First, the loss of a perceived resource is stressful to any-
one, and the impact of that stress increases as the centrality of the resource increases (Hobfoll, 1989). Therefore, the cognitive impairment of a spouse may be far more difficult when a couple is close to each other than when a less intense relationship is operative. Of course it is possible that couples in which one spouse has become impaired have retreated from mutual closeness to a more asymmetric or even detached position prior to our data collection; as we will argue below, such detachment appears to have adaptive value. So to find the effect as strong as it is in our data and to see its persistence over time both supports our measure of closeness and underscores the power of the phenomenon it reflects. From this perspective, the continuation of mutual closeness in the context of a spouse's severe impairment may represent a failure in adaptation.

Second, a spouse is often a source of emotional close-
ness, particularly through provision of emotional support and by being a person with whom one can share one's most intimate thoughts and feelings. When one spouse becomes dependent because of chronic illness or physical disability, these qualities of the relationship may be disrupted, but the extent of the disruption is probably limited to the extent that the spouse's own distress or pain prevents him or her from remaining emotionally connected. When cognitive

### Table 4. Unadjusted CES-D Means for Husbands by Closeness Category and 1985 Wife Mortality

<table>
<thead>
<tr>
<th>Couple Closeness</th>
<th>Both Names</th>
<th>One Name</th>
<th>Neither Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Husband's 1982 CES-D</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wife Cognitive Impairment</td>
<td>None</td>
<td>5.4 (6.2)</td>
<td>6.6 (6.6)</td>
</tr>
<tr>
<td></td>
<td>Mild-Moderate</td>
<td>5.5 (7.2)</td>
<td>6.9 (8.6)</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>19.0 (14.2)</td>
<td>6.3 (4.6)</td>
</tr>
<tr>
<td>Husband's 1985 CES-D</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wife Cognitive Impairment</td>
<td>None</td>
<td>5.6 (6.5)</td>
<td>6.4 (8.5)</td>
</tr>
<tr>
<td></td>
<td>Mild-Moderate</td>
<td>5.4 (5.7)</td>
<td>4.0 (6.0)</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>18.8 (15.7)</td>
<td>4.0 (4.0)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wife Mortality</th>
<th>Wife Dead in 1985</th>
<th>Wife Alive in 1985</th>
</tr>
</thead>
<tbody>
<tr>
<td>Husband's 1985 CES-D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wife Cognitive Impairment</td>
<td>None</td>
<td>14.5 (12.3)</td>
</tr>
<tr>
<td></td>
<td>Mild-Moderate</td>
<td>8.3 (14.4)</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>5.8 (4.8)</td>
</tr>
</tbody>
</table>
impairment is the source of dependency, changes in personality, mood regulation, behavior, memory, planning, reasoning, and judgment interfere with maintenance of the empathic connection in a close relationship. Therefore, married couples who are particularly close may be expected to experience greater loss. Loss of an important emotional attachment can lead to depression (Blatt and Zuroff, 1992).

Third, long-term marriage provides one with an expectation of safe dependency in old age. Here again, cognitive impairment in a spouse presents a uniquely stressful situation. One spouse is forced to watch the gradual erosion of the person upon whom one expected to rely. For husbands, an impaired wife presents a challenge to hopes and expectations of how things would be. For wives, an impaired husband presents caregiving demands she had most likely already anticipated combined with the perhaps unexpected loss of a long-time friend as he becomes transformed. For both, the situation is uncontrollable, one in which no respondent behavior is likely to alter or even retard the ultimate outcome; and it is one for which the unimpaired spouse can take no responsibility. The latter may seem self-evident and of little consequence, yet in married couples who are close, depression or good spirits in one spouse are strongly associated with similar feelings in the other (Tower and Kasl, 1995, 1996a, 1996c) and the expectation of cross-spouse influences and therefore responsibilities would be a natural one. Again, marital closeness amplifies the contagion and thus probably generalization of the expectation that one can affect one’s mate. The feelings of helplessness that are intrinsically a part of the situation of dealing with cognitive impairment would thus be greatest in close couples and, therefore, to the extent that feelings of hopelessness and helplessness are associated with depressive symptoms, closer couples could be expected to feel them more strongly along with their associated depressive symptoms.

The endurance of the impact of marital closeness over three years. — Few longitudinal studies exist concerning the impact of a cognitively impaired spouse on the other spouse although such research is urgently needed (Schulz, Visitation, and Williamson, 1990). One notable exception is a longitudinal study of 28 husbands and 58 wives who were caring for demented spouses. The caregivers were 30 times more likely than a group of sociodemographically matched control subjects to be depressed. Of even greater interest, the depressive reactions of the caregiving spouses were atypical: in contrast to the comparison group of spouses with no cognitive impairment, they were highly unlikely to have experienced either a prior episode of a depressive disorder or to suffer a family history of mental illness (Dura, Stukenberg, & Kiecolt-Glaser, 1990). Psychological autopsies of older men who have committed suicide showed that they were unlikely to have had a prior history of depression (Conwell et al., 1966). Since suicide in the elderly is most common in men, and specifically in those men who are depressed (Pearson, 1996), male caregivers of demented wives comprise a particularly high risk group, and aggressive intervention efforts are indicated.

A second important longitudinal study also underscores the unique influences of one spouse’s cognitive impairment on the other spouse. Pruchno et al. (1990) followed 198 husbands and wives who had been identified as providing in-home care to demented spouses for a year. They measured depressive symptoms and self-rated health at 6 months and again at 12 months. Their data clearly showed that depressive symptoms preceded decreases in physical health, with poorer health occurring over time, presumably as the symptoms of the impaired spouse increased. These findings are consistent with the large community-based study of Grafstrom et al. (1992) that showed spouses of demented individuals who were institutionalized to be in poorer health than spouses of those who remained at home. They suggest future health risk in our particularly vulnerable group of husbands.

The interaction of wife impairment and her survival. — Our results suggest a husband’s relief when a severely impaired wife dies and, presumably, the negative impact of her impairment ceases. They contrast with findings of Bodnar and Kiecolt-Glaser (1994), who found that depression associated with caregiving to a demented spouse lingered up to 3 years beyond the death of the spouse. However, in that study the patients had all been diagnosed with Alzheimer’s disease and their spouses were identified caregivers. Nineteen had been institutionalized. It is possible that once a patient is identified and his or her caregiver is actively seeking help or support, the dynamics of the relationship and its impact change. Indeed, while one of the effects of formal support may be to facilitate emotional detachment from a demented spouse in order to cushion the negative impact of the loss of the relationship as it had been, another may be to increase a sense of responsibility and thus prolong symptoms through increasing rumination (Bodnar and Kiecolt-Glaser, 1994). Because only eight of the most severely impaired wives in our study who had couple closeness data died within the 3-year interval (13 remained alive), and only 10 of the husbands with the most severely impaired wives had 1985 CES-D data (out of a possible 26), we must consider our last analyses to be exploratory only.

Gender differences. — We note that a husband’s depressive symptoms were clearly affected by a wife’s cognitive impairment and that the reverse did not occur within the frame of our observations. We are not saying, however, that husbands had higher levels of depression. Rather, as is consistently found, the females in the sample scored higher than the males (for discussion, see Tower and Kasl, 1996a). The only condition in which that was not true occurred among husbands in mutually close marriages whose wives were severely impaired. To this point, we again note the association between severe impairment and increased risk of mortality (Bruce et al., 1995) and suggest that issues of unexpected loss may have been prominent, especially for those husbands who did not disengage emotionally from their spouses.

Specifically, husbands may hold the expectation that their wives will always be available; wives, on the other hand, can expect to finish out their later years as a widow and are thus more likely to anticipate that they will need al-
terrine sources of support once their husband dies. Perhaps the difference in this expectation underlies men’s tendency to rely on their wives for closeness whereas wives are more likely to have an extended circle of intimate relationships (Lowenthal and Haven, 1968; Tower and Kasl, 1996a). A wife’s cognitive impairment may, therefore, present a husband with requirements for adaptation that he had not expected and for which he is ill prepared. At the same time, a wife would have not only expected to rely on those other than her husband as she aged, but would have put those relationships in place.

**Final comments.** — Finally, we note unique features of depressive experience associated with living with a cognitively impaired spouse. It appears to differ from other depressive experience in etiology, course, and consequences. Specifically, its development is more likely to be of first onset and lacking in family history (Dura, Stukenberg, and Kiecolt-Glaser, 1990) suggesting that it is a response to a uniquely stressful situation. In addition, whereas women usually respond to social influences with depressive symptoms and men do not (Brown and Harris, 1978; Nolen-Hoeksema, 1987), husbands respond to this situation with heightened distress. The symptoms precede decrements in physical health rather than following from them (Prucho et al., 1990), and thus the situation presages somatic as well as psychological risk. Finally, in our study depressive symptoms remitted upon the death of a cognitively impaired spouse. Because our data help identify a population at particularly high risk for such depression — specifically, husbands of cognitively impaired wives who are in close marriages — we suggest that intervention efforts aimed to specifically serve them be initiated.

**ACKNOWLEDGMENTS**

This research was supported by National Institute on Aging (NIA) Contract N01 AG-0-2105, awarded to Yale University as a research site for the Established Populations for Epidemiologic Studies of the Elderly (EPSE), and by NIA-funded research training Grant ST32 AG00153 in epidemiology and aging.

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Received May 3, 1996
Accepted April 29, 1997