The Influence of Ethnicity and Gender on Caregiver Health in Older New Zealanders

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Objectives. We examined the interrelationships between ethnicity, gender, and caregiving on the health of older New Zealanders. We hypothesized that those providing higher levels of care and more care across time would have poorer health outcomes and that these relationships would be moderated by ethnicity and gender.

Method. A representative sample of participants (N = 2,155) aged 54–70 years from the first 2 waves of the New Zealand Health, Work and Retirement study completed postal surveys in 2006 and 2008. Caregiving questions were adapted from the Australian Women’s Health study, and health measures were derived from the SF36 Health Survey.

Results. Women and Māori (indigenous New Zealanders) were more likely to provide care than men and non-Māori. Respondents providing higher levels of care reported poorer mental health and this was particularly true of Māori and female caregivers. Male Māori caregivers providing the highest level of care reported the poorest mental health. Level of care was unrelated to physical health. There was minimal evidence for changes in health over time based on caregiver status.

Discussion. The poorer health of caregivers supports previous findings on the detrimental health effects of caregiving. Caregiving may have more detrimental effects on Māori health outcomes due to existing inequalities in health, barriers to formal support services, and the multiple roles of elder Māori.

Key Words: Caregiving—Cultural factors—Gender—Health outcomes.
Second, small sample sizes result in random sampling errors and if population effects are low then sample effects will be hard to detect. Third, the positive aspects of caregiving may mitigate negative distress unless the caregiving situation is particularly stressful. Four, caregiving for particular conditions (e.g., dementia) may be more stressful than others and many studies do not differentiate between the conditions of the care recipient. In addition, despite the many instruments available to measure the effects of caregiving, such as those that measure caregiver burden and distress, there is no generally accepted definition of what caregiving is nor agreement on how to operationalize it (Hermanss & Mastel-Smith, 2012). Inconsistencies and ambiguities in identifying who caregivers are and what they do may lead to either under- or overestimation of the number of caregivers and the level of caregiver burden experienced (Giovannetti & Wolff, 2010).

Vitaliano and colleagues (2003) provide a theoretical framework for understanding the relationships between caregiving and health. This model suggests that chronic stressors may lead to psychological distress and/or poor health habits (e.g., substance abuse, poor diet), which in turn leads to physiological responses (e.g., higher stress hormones, metabolic disorders). These result in or at least exacerbate the progression of illness. In addition, psychological distress may interact with health behaviors increasing the risk of caregiver illnesses. Individual differences, such as vulnerabilities and resources, may also moderate the relationship between stressors and distress. For Vitaliano and colleagues, resources are a function of the individual interacting with their environment (e.g., social support, coping strategies, financial resources) and are hence amenable to intervention. Vulnerabilities on the other hand are persistent characteristics such as ethnic and gender. Whether these stressors “add to or interact” with caregiving status is of interest (Knight & Sayegh, 2010).

Ethnicity has been found to influence the caregiving experience, although this research has been largely confined to North American-based studies. In a meta-analysis of ethnic differences in caregiver-related variables, Pinquart and Sörensen (2005) found ethnic minority caregivers provided more hours of care than white caregivers and were physically in poorer health. However, psychologically, these caregivers were better off and this was primarily observed for African American caregivers (compared with Asian American, Hispanic, and white caregivers). Cultural norms such as individualism and familism have been suggested as explanations but only partially explain ethnic differences in caregiving outcomes (Aranda & Knight, 1997; Dilworth-Anderson, Williams, & Gibson, 2002). Knight and Sayegh (2010) note there is a shared “common core” to stress and coping for family caregivers and that the role of cultural values is smaller and more complex than anticipated. They suggest more focus on group-specific cultural values that may influence outcomes of the caregiving experience. Ethnicity may also interact with the distress-caregiver health relationship because of its relationship to health inequalities and structural disadvantage.

Gender is an important potential moderator as there are demonstrated differences between men and women on a number of relevant health-related variables with women reporting higher levels of depression (Van de Velde, Bracke, & Levecque, 2010), more health problems (Denton & Walters, 1999), and utilizing more health care (Koopmans & Lamers, 2007). Women generally report greater caregiver burden than men (Barusch & Spaid, 1989), although gender differences are small (Pinquart & Sörensen, 2006). Pinquart and Sörensen argue these gender differences are due to higher levels of caregiving stressors and, to a lesser extent, lower levels of social resources among female caregivers.

Caregiving is largely undertaken by women (Lee & Porteous, 2002; Singer, Biegel, & Ethridge, 2010), with women comprising nearly three quarters of all informal caregivers of older adults (Calasanti & Slevin, 2001). As the population ages, an increasing number of caregivers are likely to be older women (Lee, 2001a) as caregiving work is a role not traditionally expected of men (Singer et al., 2010).

The New Zealand Context

The population of New Zealand is approximately 4.4 million people, with the major ethnic groupings being European (77%), Māori (indigenous peoples, 15%), Pasifika (7%), and Asian (10%) (Statistics New Zealand, 2012). Health disparities within the New Zealand population are well documented with Māori having poorer health outcomes, higher rates of chronic disease, and shorter life expectancy than other ethnic groups (Blakely, Tobias, Atkinson, Yeh, & Huang, 2007). The New Zealand Ministry of Health notes that both socioeconomic position and ethnicity contribute to these health inequalities through multiple pathways (Ministry of Health and University of Otago, 2006).

The New Zealand population is aging overall and people are living longer. By 2051, one in every four New Zealanders will be aged 65 and older (Statistics New Zealand, 2000), leading to an increased prevalence of age-related morbidity, chronic illness, and disability. At the 2006 census, the majority (93%) of New Zealanders aged 65 and older lived in private dwellings (Statistics New Zealand, 2007). Those living in residential care are entering that care at a later age and with higher levels of disability (Davey, de Joux, Nana, & Arcus, 2004) suggesting that most older people with disabilities and high dependency on others will live in private households within the community (Dwyer, Gray, & Renwick, 2000). Thus, the provision of informal home-based care, by family members, for frail, ill, or disabled older people is likely to become more prevalent.

The number of caregivers has increased in New Zealand in line with the aging population, but the proportion of
carers in older age groups has increased at a faster rate than in the general population. For instance, from 2001 to 2006, the number of carers aged 55 and older increased by 29% (from 26% to 30% of all carers) compared with an increase in older people in the general population of only 15% (Department of Labour, 2011). Female carers outnumber male carers in every age group in New Zealand (Department of Labour, 2011).

As noted earlier, Māori make up 15% of New Zealand’s population; however, the Māori population is much younger than the total population—just under 14 years younger than the median age of the total population (Statistics New Zealand, 2012). Whereas the percentage of the general population aged 65 and older is 13%, for Māori this percentage is 4.6% (Statistics New Zealand, 2012). Māori are more likely to be caregivers than other ethnic groups in New Zealand with Māori females the most likely group undertaking this role (23% of all Māori women compared with 16% of New Zealand European women).

In sum, there is clear evidence for the detrimental impact of caregiving on psychological well-being and, to a lesser extent, physical health. Caregivers often put their own needs aside to deal with difficult situations with little practical support (Lee, 2001b), often at a great cost to themselves (Schulz & Beach, 1999). With a rapidly aging population, the number of older family members providing informal care for frail, ill, or disabled older people will rise. Vitaliano and colleagues’ (2003) caregiver stress-health model would suggest that some groups of caregivers might be at higher risk than others due to well-cited vulnerabilities (e.g., women, ethnic minorities such as Māori) and low resources (e.g., low socioeconomic status). These groups will be worse placed to manage distress and hence have a greater illness risk. The emotional and physical well-being of older caregivers is therefore of increasing concern.

The present study examines the relationship between caregiving and health among older New Zealanders. Based on Vitaliano and colleagues’ framework, we hypothesize that:

**H1:** Caregiving (taking into account levels of care and changes in caregiver status) will be associated with poorer health outcomes. Specifically, those providing higher levels of care and more care across time will have poorer health outcomes.

**H2:** The caregiving health relationship will be moderated by gender and ethnicity. Specifically, female and Māori caregivers will have poorer health outcomes than male and non-Māori caregivers.

**METHOD**

**Participants and Procedures**

The sample of 2,155 New Zealanders (aged 54–70) was taken from the Health, Work and Retirement (HWR) study (Alpass et al., 2007). The focus of the HWR study is on the determinants of health in older adults in the general New Zealand population as they move from work into retirement and older age.

The first HWR postal survey in 2006 sampled older New Zealanders aged 54–70 years of age from the New Zealand electoral roll. The electoral roll provides an efficient sample frame for the purposes of this study, as data can be requested for the study population only (the electoral roll will provide names and addresses for the age band under investigation). The roll also provides the opportunity for enrollees to indicate whether they are of Māori descent (Māori descent indicator). Equal probability random sampling procedures were used to select two independent samples from the New Zealand electoral roll to represent the general population, which includes Māori (N = 5,264) and the Māori only population (N = 7,781), using the Māori descent indicator, in the targeted age group. The rationale for using the Māori descent indicator for those who choose to register on the electoral roll is based on problems of categorizing Māori identity. It has been established by Māori researchers (Te Hoe Nuku Roa Research Team, 1999) that people of Māori descent do not always agree with traditional census categorizations and often prefer to align themselves with a range of different groups. The use of the electoral roll is a way to invite those who have made a specific identification, as being of Māori descent, to participate. Māori oversampling was undertaken to combat the lower research participation rates for Māori found in previous health surveys undertaken by the authors and colleagues (Baken & Stephens, 2005; Paddison, 2004; Towers et al., 2006), and historically low response rates found in older ethnic minority populations (Moreno-John et al., 2004). Registration on the New Zealand electoral roll is mandatory for all citizens eligible to vote in government elections and in 2007, 96% of all eligible New Zealanders were registered.

In total 13,045, 54- to 70-year-olds were surveyed. The total response rate (after exclusions, e.g., unable to be contacted, deceased, or institutionalized) was 53% (N = 6,662). Specifically, the general subsample return rate was 62%, and the Māori descent subsample return rate was 48%. Despite the anticipated lower response rate for Māori, both the HWR baseline subsamples (Māori and non-Māori) align closely with their respective New Zealand populations in age, gender, and education; however, the sample in general reflects a greater number of New Zealanders who are still working (i.e., not retired) and those with higher incomes.

Participants provided information on key determinants of successful aging in the transition from work to retirement: health and health care use, individual and household demographics, work participation and retirement factors, independence, and social participation (including caregiving responsibilities).

At the first data collection wave, participants were invited to take part in the longitudinal component of the study and 3,071 (46%) elected to do so. These people were sent
surveys in 2008 for the second data wave and 2,484 returned completed questionnaires (81% response rate), which also included an extended module on caregiving.

Comparing non-Māori Wave 2 completers with Wave 2 noncompleters, there was no difference in the proportions of participants who were female, partnered, urban dwellers, or in participant’s living standards. However, compared with Wave 2 completers, noncompleters were slightly older, were less likely to be working, less educated, and in poorer health.

Comparing the baseline data for Māori Wave 2 completers to noncompleters, there was no significant difference in participant mean age or the proportion of Māori participants who were female, partnered, or living in urban centers. However, compared with Wave 2 completers, noncompleters were less likely to be working, less educated, had significantly lower living standards, and were in poorer health.

**Measures**

**Dependent variables.**

**Health.** Health measures were derived from the SF36 Health Survey (Ware, Kosinski, & Dewey, 2000). This is a widely used, valid and reliable short form measure of generic health, or self-reported functional health and well-being. The SF36 has 36 items and provides scores on eight health subscales (general health, physical functioning, role physical, bodily pain, social functioning, role emotional, vitality, and mental health). These subscales were combined (algorithms provided by the developers) using principal components derived coefficients (again from the developers) to form two summary components assessing physical and mental health: the physical component summary score and the mental component summary score. In the current study, these two component scores were employed from both time 1 and time 2. Lower scores imply poorer health.

**Predictors.**

**Demographic variables.** Age, gender (females = 1, males = 0), ethnicity (non-Māori = 1, Māori = 0), and wealth were measured. The wealth variable was calculated based on estimated value of assets owned (Enright & Scobie, 2010). Participants were classified as either in full-time or part-time employment, retired, or other (e.g., student, unemployed, homemaker) and these categories were recoded into a binary variable (working = 1, not working = 0). Participants were also categorized as having no educational qualifications, secondary school qualifications, or tertiary educational qualifications. The Economic Living Standards Index short form was also used to measure individuals’ economic standard of living (Jensen, Spittal, & Krishnan, 2005). The scale measures four different areas: restrictions in social participation, restrictions in ownership of assets, the extent respondents economize, and self-rated standard of living. Scores can be combined to categorize individuals into seven ordinal groups ranging from “severe hardship” to “very good” economic living standards.

**Caregiving variables.** Caregiving questions were adapted from the Australian Women’s Health study (Brown et al., 1996). Participants were asked in 2006 and 2008: “Do you regularly provide care or assistance (e.g., personal care, transport) to any of the following people because of their long-term illness, disability, or frailty? (Someone who lives with you, Someone who lives elsewhere).” Based on responses to this question, Caregiver Status was coded “1” for caregivers and “0” for noncaregivers. Measures of frequency and duration of care were also included at both waves. These two variables were combined to produce a continuous measure of level of care (Care Level) ranging from none (0 hr of care for noncaregivers) to high (168 hr per week for those who provided care 24 hr per day, 7 days a week) for both time 1 and time 2. Participants were divided into four categories based on the taxonomy employed by Lee and Gramotnev (2007) to indicate Caregiver Transition over time: Caregivers at both surveys (“Continuing”): Caregivers at data Wave 1 but not at data Wave 2 (“Stopped”); Caregivers at data Wave 2 but not at data Wave 1 (“Started”); and Not Caregivers at either data wave (“Never”).

**Analysis**

In line with stated hypotheses, we used hierarchical regression analyses to examine the contribution of predictors at time 1 to mental and physical health at time 2. For the purposes of regression analysis, two variables were dummy coded. The caregiver transition variable was dummy coded into: Transition 1 = Continuing versus Stopped, Started, and Never (1,0); Transition 2 = Continuing and Stopped versus Started and Never (1,0); Transition 3 = Continuing, Stopped, and Started versus Never (1,0). Education was dummy coded into two variables: educ1 = no educational qualifications versus secondary school and tertiary qualifications (1,0) and educ2 = no educational qualifications and secondary school qualifications versus tertiary qualifications (1,0).

At step 1, demographic variables and SF36 health component scores from time 1 were entered. The effects of ethnicity, gender, and caregiving (care level at time 1 and time 2 and care transition dummy variables) were estimated at step 2 after controlling for variables in step 1. In step 3, the moderating effects on health of ethnicity and gender by level of care at time 2 were estimated with the inclusion of two-way interaction terms after controlling for demographics, health, ethnicity, gender, and caregiver variables. Finally, in step 4, a three-way interaction was entered to examine the impact on health of gender by ethnicity by care level at time 2.
RESULTS

Sample Description

Of the 2,155 participants who completed caregiving modules in both waves, 40.1% identified their primary ethnicity as Māori, 52.3% identified as European New Zealander, and less than 1% identified as Pasifika peoples (7.1% missing data). Female participants made up 53% of the sample. Age ranged from 54 to 70 years at baseline with a mean of 61 years (SD = 4.48). Thirty percent of participants lacked any formal education, whereas a large majority (77%) reported their economic living standards as fairly comfortable or better (although 14% reported some level of hardship).

Caregiver Status

In 2006, 35.5% (N = 764) of the sample reported they regularly provided care or assistance to others (see Table 1). Women were more likely to be caregivers than men in the sample. Māori were more likely to be caregivers, and caregivers were less likely to be in full-time employment than noncaregivers. There were no differences between the two groups on age, education, or wealth. Caregivers had significantly lower scores on mental and physical health compared with noncaregivers, with the effect sizes for these differences small (Cohen’s d = .2 for both).

In 2008, 23.4% of the sample reported they regularly provided care or assistance to others. There were no differences in age, wealth, or education between caregivers and noncaregivers, but caregivers were less likely to be in full-time employment compared with noncaregivers. Women again provided proportionally more care than men, and Māori provided proportionally more care than non-Māori. Caregivers had significantly lower scores on mental and physical health compared with noncaregivers, although effect sizes were again small (Cohen’s d = .2).

Table 2 provides means and standard deviations for 2006 and 2008 on SF36 health component scores for the total sample and by the caregiver transition variable. Analysis of variance results show that in both waves, there were statistically significant differences between the four groups on these health outcome scores. The differences in mean scores between the groups were quite small. The effect sizes calculated using η² ranged from .01 to .02. Post hoc comparisons using Scheffe’s range tests showed that in 2006, the “Never” group had significantly higher mental health scores than all three caregiving groups, and significantly higher physical health scores than the “Continuing” and “Stopped” groups. In 2008, the “Never” group had significantly higher mental health scores than the “Continuing” or “Stopped” group, and significantly higher physical health scores than the “Stopped” group.

Change in SF36 health component scores across time for the total sample and the four transition groups was undertaken using paired sample t tests. For the total sample and for the “Never” group, there was a statistically significant difference in the scores for physical health across waves, t(2,154) = 3.462, p = .001 and t(1,244) = 4.34, p < .001. No other statistically significant changes across time were found.

Table 1. Descriptive Data, and Univariate Effects, for Characteristics of Caregivers and Noncaregivers in Wave 1 (2006) and Wave 2 (2008), N = 2,155. Percentages, or Means (Standard Deviations in Brackets)

<table>
<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td>Caregivers (N = 764)</td>
</tr>
<tr>
<td>Age</td>
<td>61.1 (4.46)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Men (N = 1,002)</td>
<td>31.2</td>
</tr>
<tr>
<td>Women (N = 1,127)</td>
<td>39.0</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>Māori (N = 864)</td>
<td>39.8</td>
</tr>
<tr>
<td>Non-Māori (N = 1,139)</td>
<td>31.9</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>No school (N = 656)</td>
<td>36.1</td>
</tr>
<tr>
<td>Secondary (N = 459)</td>
<td>36.2</td>
</tr>
<tr>
<td>Tertiary (N = 1,019)</td>
<td>34.6</td>
</tr>
<tr>
<td>Wealth</td>
<td>$458K (598)</td>
</tr>
<tr>
<td>Work status</td>
<td></td>
</tr>
<tr>
<td>Full-time work (N = 872)</td>
<td>29.2</td>
</tr>
<tr>
<td>Part-time work (N = 281)</td>
<td>35.9</td>
</tr>
<tr>
<td>Retired (N = 348)</td>
<td>39.4</td>
</tr>
<tr>
<td>Other (N = 101)</td>
<td>41.6</td>
</tr>
<tr>
<td>SF36 Mental Health</td>
<td>48.37 (10.35)</td>
</tr>
<tr>
<td>SF36 Physical Health</td>
<td>48.49 (10.25)</td>
</tr>
</tbody>
</table>

Notes. *Ns may vary due to missing data.
**At Wave 1 (2006). Wave 2 Ns for work status are full-time = 773, part-time = 548, retired = 435, and other = 277.
*p < .05. **p < .01. ***p < .001.
Examining the findings for mental health (Table 3), with all variables in the model, level of care at time 2 was a significant predictor of mental health scores with those providing the highest levels of care (more hours per day more frequently) reporting poorer mental health. Change in caregiver status across time (transition variables) was not significantly related to mental health scores. None of the caregiving variables contributed significantly to the explanation of physical health scores (Table 4).

**H1: Caregiving and Health**

Examining the interaction effects on outcome variables, gender and ethnicity did not moderate the relationship between level of care and physical health scores. However, all three interaction effects contributed to mental health scores. Ethnicity and gender moderated the effect of level of care at time 2 on mental health with Māori and women who provided the highest level of care having the lowest mental health scores. The three-way interaction was also statistically significant. Separate regressions were run by gender and ethnicity, which showed that the relationship between level of care and mental health scores was strongest for Māori men, with higher care related to poorer mental health for this group.

The strongest predictor for mental health scores in 2008 was mental health scores in 2006, followed by level of care. The incremental variance explained by the addition of gender, ethnicity, and caregiving variables in Model 2 and interaction terms in Models 3 and 4 was small (1% and <1%, respectively).
Hypothesis 1 predicted that those providing high levels of care would report poorer health. Level of care at time 2 contributed significantly to mental health when controlling for demographic variables and level of care at time 1. These findings support the considerable evidence for the detrimental effects of the burden of care on psychological well-being (Fortinsky et al., 2007; Ory et al., 2000; Pinquart & Sörensen, 2003; Schulz et al., 1995). Level of care was unrelated to physical health scores in the present sample. As noted earlier, the physical effects of caregiving have been found to be smaller than for psychological effects. Pinquart and Sörensen (2003) argue that particular conditions (e.g., dementia) may be more stressful than others and that by not differentiating between conditions, researchers may be underestimating the effects of burden on health. The number of caregivers proving care for a care recipient with Alzheimer’s or dementia in the current sample at time 2 was small (n = 81). Post hoc nonparametric tests showed no difference in physical health between these caregivers and other caregivers and noncaregivers; however, these carers did on average spend more time caregiving and on more occasions. Given previous studies have found self-reported health associated with caregiving (Fortinsky et al., 2007; Ory et al., 2000; Pinquart & Sörensen, 2003), findings from the present study suggest that our measure of perceived physical health may not adequately estimate objective health status for this sample. Scott, Tobias, Sarfati, and Haslett (1999) have argued that the SF36 lacks sensitivity in detecting differences in physical health.
health status when the sample is in generally good health (i.e., ceiling effects occur on a number of the subscales). As a community-based sample, our participants were in relatively good health. Scott and colleagues (1999) argue that, in the New Zealand context at least, the SF36 may provide a more accurate measure of objective health in clinical groups rather than population subgroups.

The cross-sectional analyses of caregiver transitions suggest that caregiver groups (those that had involvement in caregiving in the 2-year survey period) had poorer mental and physical health scores in 2006 and 2008 compared with those that had not provided care at all. However, in multivariate analyses, the three caregiver transition variables were unrelated to health status at time 2 for either mental or physical health when controlling for demographic variables and level of care. The Caregiver Health Effects Study has shown that transitioning into spousal caregiving or into more demanding caring resulted in declining physical health over time (Burton et al., 2003). In contrast, our findings are similar to findings by Lee and Gramotnev (2007) that suggest that those in poorer health may be selected into caregiving due to availability (i.e., not in the paid workforce due to ill health). Even those who were not yet caregiving in 2006 (but were to become caregivers by 2008) were in poorer health than those that never provided care. Thus, as Lee and Gramotnev (2007) suggest, the participants in the caregiving groups continue in poor health over time, but ongoing caregiving and caregiving transitions do not affect on health status.

Hypothesis 2 stated that female and Māori caregivers would have poorer health outcomes than male and non-Māori caregivers. This was the case for mental health scores but not for physical health. Higher levels of care were related to poorer mental health in our sample and this was particularly true for women. This supports previous research that shows women are likely to experience greater caregiver burden than men (Barusch & Spaid, 1989; Vitaliano et al., 2003; Yee & Schulz, 2000). Vitaliano and colleagues argue that women may be at higher risk of experiencing the detrimental effects of caregiving due to existing vulnerabilities. One such vulnerability is having fewer resources to call upon. In our sample, in 2006, women were less well educated, had lower personal wealth, and were less likely to be in full-time employment compared with men. However, even when these variables were controlled for, women providing higher levels of care still experienced poorer levels of mental health compared with men providing the same level of care. Other resources suggested by Vitaliano and colleagues that may contribute to differential health outcomes by gender is the availability of social resources such as social support. Yee and Schulz (2000) found in their review of caregiving gender differences that men received more informal assistance for their caregiving role than women. Bookwala and Schulz (2000), in a study of spousal caregiving, found that caregiving wives were more likely to report that the caregiving role restricted their personal and social activities compared with caregiving husbands. Investigating the availability, and importantly, the uptake of both informal and formal supports by male and female caregivers may help to explain why women experience greater burden in the role.

The effect of level of care on mental health was also moderated by ethnicity. Previous research has found ethnic minority caregivers provided more hours of care and but were psychologically better off than white caregivers (Pinquart & Sörensen, 2005). In our study, Māori providing high levels of care reported poorer mental health scores compared with non-Māori providing the same level of care. As noted earlier, caregiving is valued in Māori culture and may not be perceived as burdensome as it may be for non-Māori. However, when levels of care increase, Māori may not have access to the resources that can ameliorate some of the negative consequences of providing care. As Knight and Sayegh (2010) argue, there is a shared “common core” to stress and coping for family caregivers; however, there may also be more group-specific cultural values and structural factors that influence the experience and outcomes of caregiving for Māori. It has been suggested that caregiving may have greater negative impacts on older Māori (kaumātua) caregivers compared with other groups because of their likely poorer health status (Collins & Willson, 2008). These authors also note that Māori with disabilities prefer informal over formal care and support systems. A preference for informal care may be a function of the frustration with barriers to accessing formal care systems such as cost, attitudes of health professionals, location and transport difficulties, acceptability of the service, ineffective communication about available services and staff, and services unresponsive to Māori health needs (Dürig et al., 1997). Others have noted that Māori receive fewer referrals for surgical and specialist care than non-Māori (Ellison-Loschmann & Pearce, 2006). Consequently, Collins and Willson (2008) argue many Māori “experience some degree of compromised access, use, effectiveness, and quality of health services” (p. 30). These interactions with mainstream health care may result in many Māori caregivers not benefiting from more formal support services that would help ease the burden of caregiving.

The multiple roles of elder Māori are also thought to affect on caregivers health. Collins and Willson (2008) note that kaumātua are often heavily involved in Māori society and that the scope of these roles tends to increase with age. As Dürig and colleagues (1997) note, older Māori may “experience reduced privacy, less time with family, longer working hours and a relative loss of independence” (p. 21) due to increased demands on their knowledge and expertise. In their research on the health and well-being of older Māori, Dürig and colleagues noted that 16% of kaumātua felt overburdened by their roles. This was of particular importance when considered alongside the finding that
age-related disability or poor health appeared to result in weakened cultural involvement and identity.

The relationship between level of care and mental health was strongest for Māori males. Given the considerable evidence for poorer outcomes for women in the caregiving role, this finding is somewhat surprising. Pinquart and Sörensen (2006) note that gender differences in caregiving variables may change over time. In the current study, the sample was relatively young (54–70 years). As Pinquart and Sörensen (2006) argue, changing gender roles in recent cohorts may have resulted in the caregiving experiences of men and women becoming more similar. It may also be that the nature of the care provided by male Māori caregivers was more burdensome than for other caregivers (due to the level of disability of the care recipient) resulting in poorer mental health at higher levels of care. Rates of disability are higher among Māori women compared with Māori men (Collins & Willson, 2008), and the majority of caregivers in our sample were caring for their spouse or partner. Very few Māori reside in residential facilities suggesting the care recipients of Māori men were in need of a relatively higher level of care provision. In future waves of data collection, more extensive data on the care recipient and the nature of the care tasks undertaken by the caregiver may help to clarify the differential burden of the caregiving role by gender and ethnicity.

The present findings provide some support for Vitaliano and colleagues’ (2003) theoretical framework where individual differences may moderate the relationship between stressors and distress for caregivers. Level of care operated differentially on mental health status depending on ethnicity and gender. Work status, as a “resource” was also important for health overall; however, the moderating effects of work and care were not a focus of the current study and were not examined. Caregivers with “greater” resources are likely to experience less detrimental effects from the caregiving experience. A recent meta-analysis of the correlates of physical health in caregivers found higher levels of informal support and income were related to better physical health (Pinquart & Sörensen, 2007).

There are a number of limitations to the present study. The current study followed participants over 2 years. A longer time frame would provide greater potential for examining changes in caregiver status and health over time. Two further waves have recently been collected and a further wave is scheduled for mid-2013, which will eventually provide a 7-year follow-up period. More robust measures of caregiver health and preexisting conditions could be included as important influences on health trajectories. No measures of formal support were included in the data collection. As noted earlier, some groups may be less inclined to access formal support services for various reasons (e.g., cost, locality, cultural appropriateness) and this is likely to affect on the stressor–distress relationship. A postal survey makes it difficult to measure the complex nature of caregiver burden, tasks, and responsibilities, particularly over time. Without more in-depth data collection techniques, such as that of life history calendars in face-to-face interviews, it is possible that the peaks and troughs of caregiving, that is, transitions in and out of the caregiving role, and its impact on other domains such as employment, are missed. The sample in the current study was relatively young at the first wave of data collection (54–70 years old). Informal and formal caregiving receipt increases with age-specific morbidity, with the highest levels of morbidity and health care use in those aged 80 and older (Cornwell & Davey, 2004). Our data do not currently capture the full effects of caregiving on health outcomes in this older cohort. The effects of gender and level of care provided may be more evident in older age groups. In addition, the age range meant that the care recipients ranged from children, to spouses to parents. Clearly, the caregiving experience will differ depending on the age of the recipient, the relationship to the recipient, and the nature of the recipient’s condition that warrants care. The sample at time 1 differed from the general population on work status and income and attrition at time 2 again affected on the representativeness of the sample suggesting caution when generalizing these findings to the population of interest. Despite being statistically significant, many of the effect sizes were small calling into question meaningful interpretation of these findings. Finally, there is evidence that the usual two-factor structure of the SF36 is not well supported in older Māori where traditional views of health do not reflect a Western-based dichotomy between mental and physical health (Scott, Sarfati, Tobias, & Haslett, 2000). The inability of the SF36 to capture a more holistic, integrated view of health, as traditionally viewed by Māori (Durie et al., 1997), limits its usefulness for examining ethnic differences in health status (Scott et al., 2000).

Despite these limitations, this study has a number of advantages. Addressing concerns raised by Pinquart and Sörensen (2003) regarding representativeness and sample size, this is the first publication that investigates caregiving and health in a large nationally representative sample of older New Zealanders, which includes a large subsample of Māori. The study has the potential to contribute to the understanding of the role of ethnicity and culture on the experience of informal caregiving. The two data waves reported here are followed by at least a further three waves allowing for more in-depth investigation of the impact of caregiving and caregiver transitions on health as our sample ages.

In general, we can make several conclusions. First, women and Māori are more likely to provide care than men and non-Māori. Differing health outcomes based on gender are not particularly evident in the current age group. Age and work status have an impact on health status. For Māori, increasing levels of care resulted in poorer mental health and this was particularly true for male participants. These latter findings suggest that where formal support services are put in place for older caregivers, they need to
be tailored for the particular needs of the recipients, with ease of access, low cost, and cultural appropriateness high priorities. Involvement in caregiving at any time during the 2-year survey period was related to poorer health.

Caregivers undertake a valuable service for society, and the people they care for, often at risk of their own health and well-being. With an aging population, the provision of informal care from family for the frail, disabled, or ill will increase. Promoting the health of caregivers will not simply help individuals but is likely to benefit society (Vitaliano et al., 2003).

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CAREGIVING AND HEALTH

793


