

Health, Work and Retirement Survey

Summary report for the 2008 data wave.

- Caregiving -

Rachael Pond, Fiona Alpass & Christine Stephens

A research Collaboration between

The School of
Psychology.
Massey University

The Health Research
Council of New
Zealand

The New Zealand
Institute for Research
on Ageing

School of Māori
Studies
Te Putahi-a-Toi.
Massey University

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Introduction

Unpaid family carers are an essential yet overlooked part of the health care system. Caregivers save billions in health care expenditure each year (Access Economics, 2010; Arno, 2002), improve patient outcomes, and reduce unnecessary re-hospitalisations and residential care placements. Research using cost replacement methodology, shows the value of informal care provided in Australia is \$40.9 billion or 3.2% of GDP (Access Economics, 2010). Using similar methodology the value of family care provided in NZ to older adults with dementia alone was calculated to be \$402.1 million in 2008 (Alzheimers New Zealand, 2008). With the ageing of the population, providing such care publicly would not be sustainable. The number of people aged 65+ in NZ will reach 1.28 million in 2051 and the number aged 85 and over will increase to 299,000, suggesting many carers will themselves be aged 65+. Strategies and innovations for elder care must include a strong focus on sustaining and enhancing older carers' health and wellbeing in order to meet future care needs.

A large body of research has established that carers are more likely to have adverse mental health outcomes such as depression, chronic stress, and anxiety (Pinquart & Sorensen, 2003a; Population Research and Outcome Studies Unit, 2007; Pinquart & Sorensen, 2003b; Schulz, O'Brien, Bookwala, & Fleissner, 1995; Cochrane, Goering, & Rogers, 1997). There is also sound evidence from national-level surveys and meta-analyses that family carers' physical health is much worse than the rest of the population (Pinquart & Sorensen, 2003a; Population Research and Outcome Studies Unit, 2007; Vitaliano, Zhang, & Scanlan, 2003). For example, one landmark study found that elderly spousal carers under strain had a 63% higher mortality risk (Schulz & Beach, 1999). Some groups of New Zealand carers (Māori, Pasifika, rural and older carers) are at higher risk than others due to well recognised health disparities, biological vulnerabilities, and resource issues (economic, access to health and support services).

This report documents the findings about caregiving for a family member with a long-term illness, disability, or frailty using data from the second wave of the Health, Work and Retirement study (HWR) study. In 2008, 2473 participants completed questionnaires for the second data wave. This report adds to previous research by treating caregiving as a transitional role. Those who are currently caregiving are compared with those who have previously been caregivers (recently and some time ago) and those who have not been a caregiver in the past. Effect sizes are also provided as they give important information about the magnitude of any relationships between caregiving and health outcomes. Section 1 provides background information about middle to older aged adults' involvement in caregiving. It reports on the proportions of the sample that are providing care to family members with long-term illness, disability, and frailty. It gives demographic information about who is providing such care and it reports on the caregiving situation, for example, the relationship between the caregiver and care recipient, where the care recipient lives, and the length and intensity of care. Section 2 examines the relationship between caregiving and various health outcomes.

Caregiving in Older Adults

How many people are or have been caregivers? A total of 1904 participants responded to the question about caregiver status in the 2008 survey. Of these participants, 14% (n=258) indicated they currently care for someone with a long-term illness, disability or frailty (hereafter ‘current caregivers’), and a further 4% (n=69) had been caring for such a person, but they had passed away or moved into a nursing home or hospital in the last 12 months (‘recent caregivers’). One fifth (22%, n=425) had cared for such a person in the past but this was more than 12 months ago. The majority (58%, n=1105) had not previously cared for such a person. A small percentage of participants (2.5%, n=47) worked as caregivers. Figure 1 shows the proportion of the sample who are or have been caregivers of someone with a long-term illness, disability or frailty.

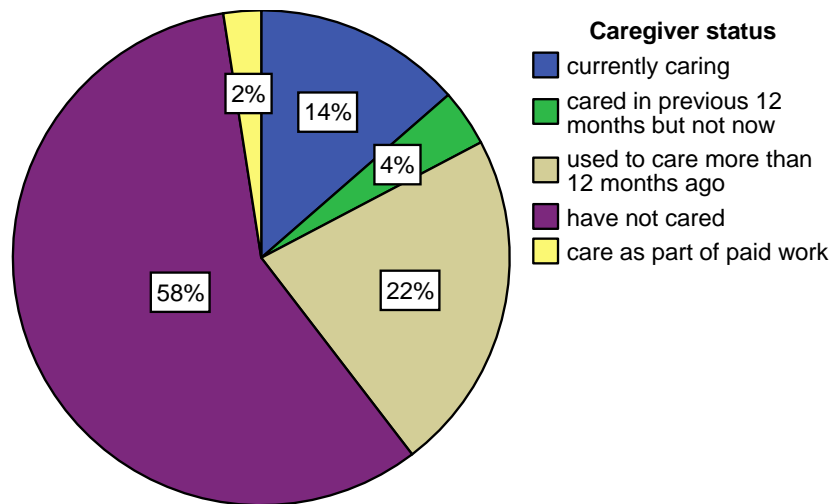


Figure 1. Proportion of sample that have cared for someone with a long-term illness, disability or frailty.

Participants were also asked about their provision of care for grandchildren. Over half (56%, n=1281) provided unpaid care for their grandchildren, either daily (8%, n=173), weekly (11%, n=261), or occasionally (37%, n =847). The remainder never provided such care (25%, n=563) or didn't have grandchildren (20%, n=453). One quarter (26%, n =634) of the sample occasionally provided unpaid care to other people's children.

The remainder of this first section focuses mainly on current or recent provision of care for someone with a long-term illness, disability, or frailty (collectively referred to as ‘caregiver participants’). The second section examines differences between current caregivers, recent caregivers, those who cared more than 12 months ago, and those who have not previously been caregivers. Those who care for grandchildren or as part of paid work are not considered further.

Demographic Profile of Caregivers

Age and Gender

Caregivers were disproportionately women, $\chi^2 (3, N = 1853) = 111.95, p < .001$. As shown in Figure 2, women outnumbered men in all categories of caregiving: current, recent, and over 12 months ago. In contrast, more men than women had not previously been a caregiver.

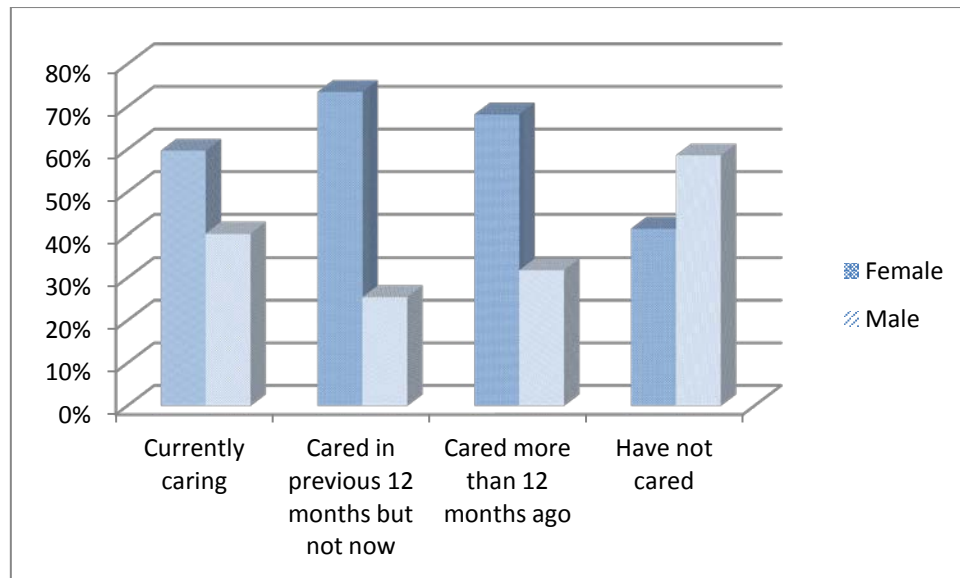


Figure 2. The proportion of males and females in each caregiver group.

Caregivers' ages spanned the full range of ages within the sample (56-72 years), and their mean age was similar as that of the sample (63.1 years, $SD=4.5$).

Work and Retirement Status

Over half (62%, $n=140$) of caregivers were employed. One third (35%, $n=79$) of employed caregivers worked full-time and 27% ($n=61$) worked part-time. A further 22% ($n=49$) of caregivers were retired with no paid work, and 10% ($n=22$) classified themselves as unable to work because of a health or disability issue. A very small proportion classified themselves as full-time homemakers or full-time students.

Ethnicity

Maori were more likely to be caregivers than non-Maori, $\chi^2 (3, N = 1835) = 12.11, p < .01$, see figure 3.

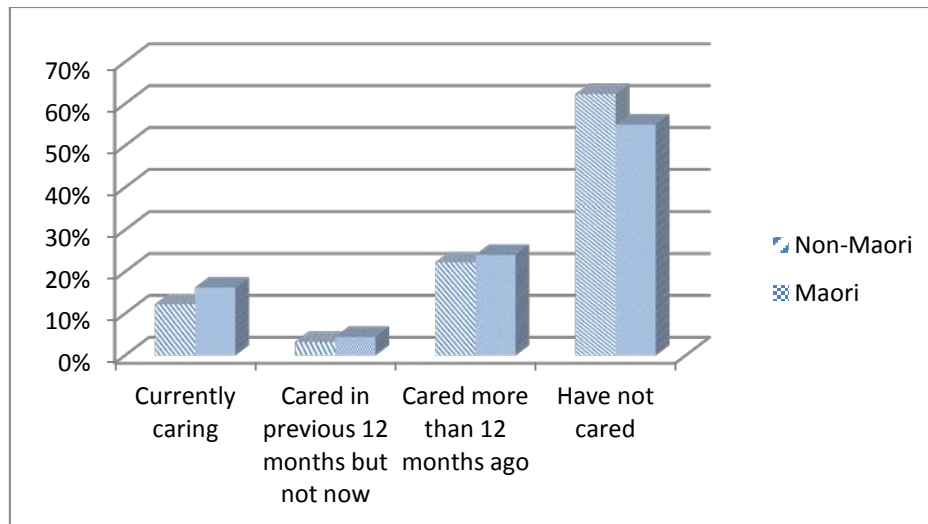


Figure 3. The proportion of Maori and non-Maori in each caregiver group.

Caregiving Situation

Participants who were currently caring for someone with a long-term illness, disability or frailty, or had cared within the last 12 months, mostly provided care to only one such person (81%, $n=243$); 13% ($n=39$) provided care to two people, and 6% ($n=18$) provided care to more than two people.

Caregiver participants selected the person they had cared for the longest, and answered questions about their relationship and the length and intensity of caring provided. The person cared for was most commonly their spouse or partner (32%, $n=93$), mother or father (26%, $n=77$), or son or daughter (11%, $n=34$). As indicated in Figure 4, a small proportion of people also provided care for their mother- or father-in-law, brother or sister, another relative, or a friend.

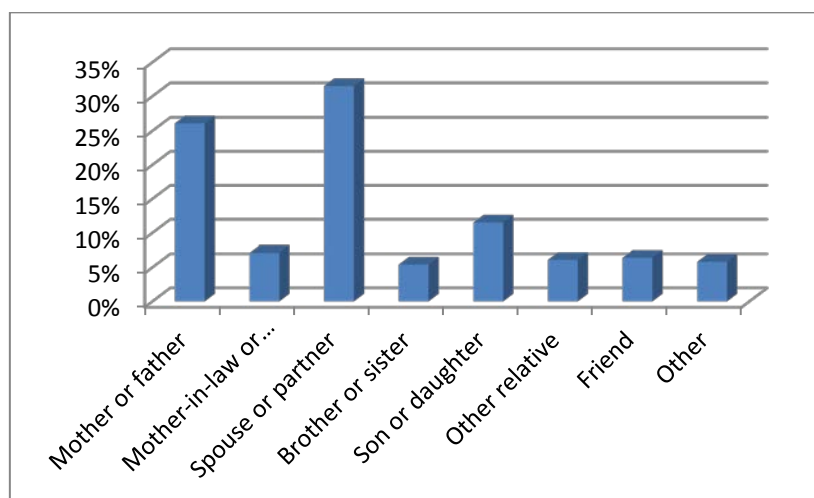


Figure 4. Care recipients' relationship to participant

The mean age of care recipients was 69.6 (SD=20.2, range 1-98 years). As shown in Figure 5, most care recipients were older.

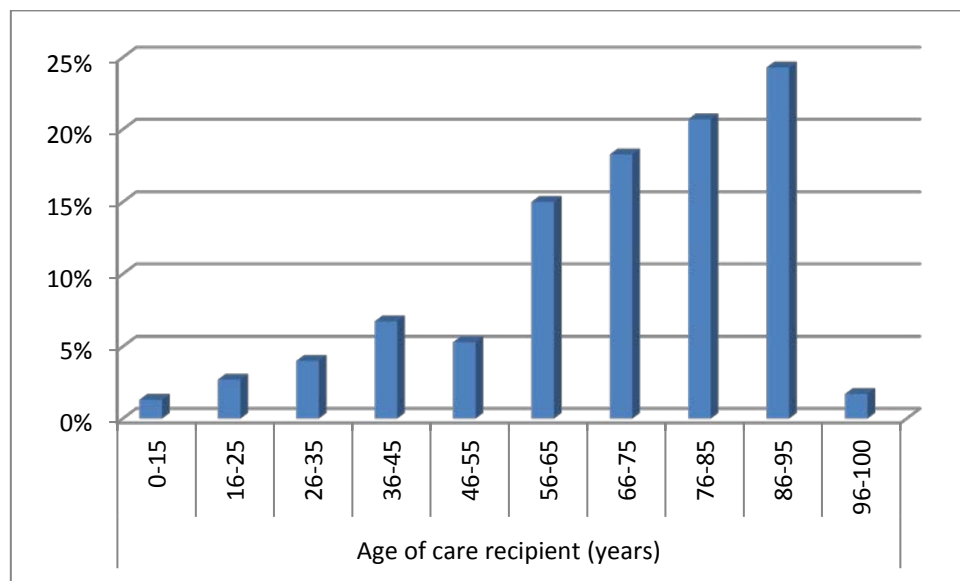


Figure 5. Age of care recipients

As illustrated in Figure 6, the care recipients living arrangements varied. Almost half (47%, n=139) lived with the participant, a quarter (25%, n=74) lived alone, 11% (n=32) lived with their family, and another 11% (n=33) lived in a nursing home or care facility.

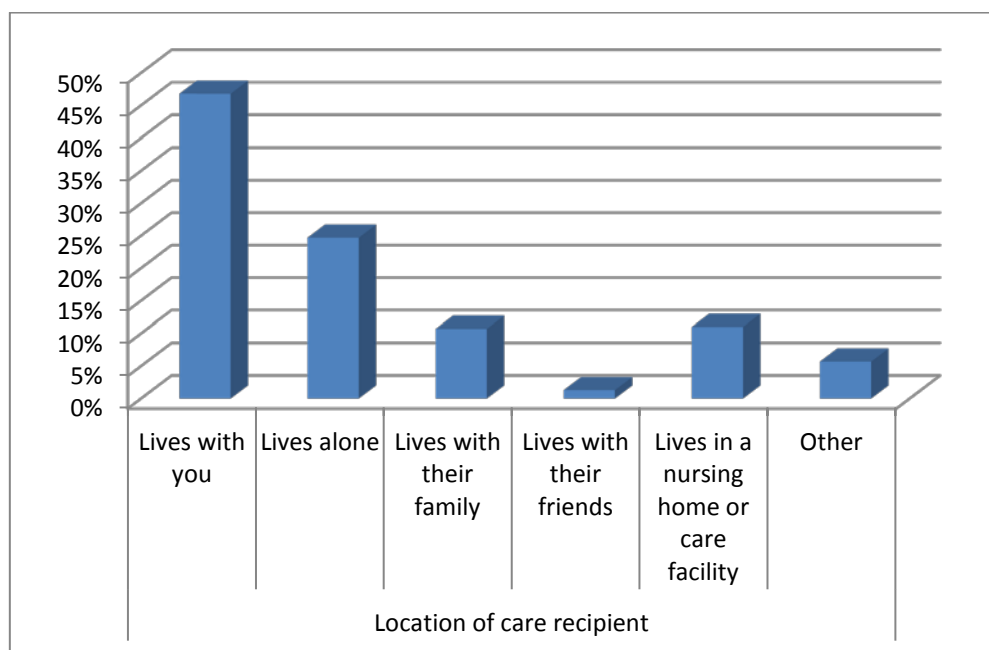


Figure 6. Living arrangements of the people receiving care from participants.

The length of time participants had cared varied from 1 month to just over 45 years, with a mean of 8.4 years (SD=9.6 years). Figure 7 shows the proportion of caregiver participants who had provided short and long-term care. Over half of caregiver participants (56%, n=182) had provided care for 5 years or less: 16% for less than one year. Just under a half (44%, n=145) of the caregiver participants had provided care for more than 5 years to a person with a long-term illness, disability or frailty.

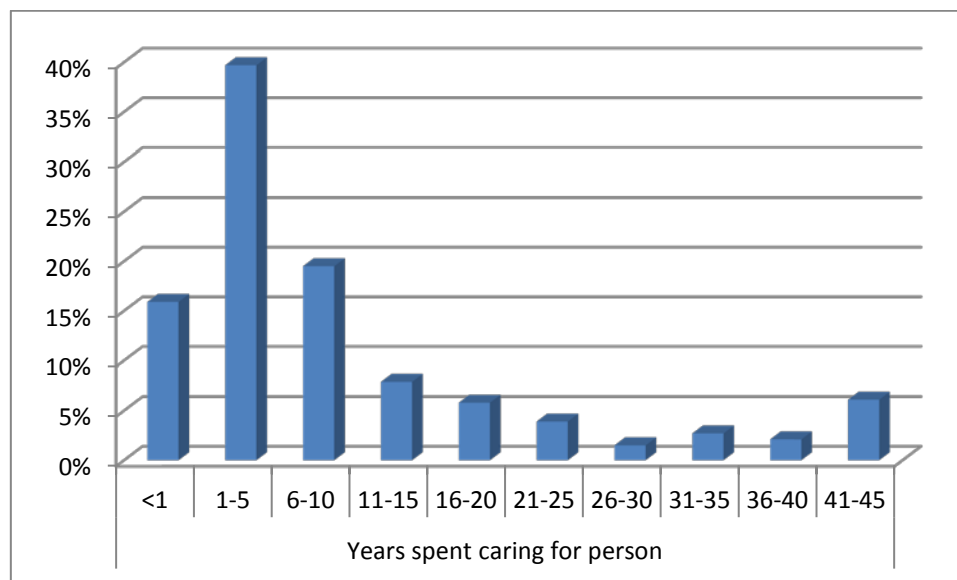


Figure 7. Length of time caregiver participants have been caring for someone with a long-term illness, disability or frailty.

Some caregiver participants spent a significant amount of time caring for the person concerned. One sixth (17%, n=51) cared all day and night, 7 days per week. A similar proportion (18%, n=53) provided care several hours every day. A further 15% (n=43) provided care several hours a day, several times per week; 9% (n=27) and 10% (n=30) provided care for about an hour each day or an hour several times per week, respectively.

Caregivers provided care for family members and friends with a range of medical conditions and disabilities. The most commonly cited condition was frailty in old age (38%, n=124). Other commonly cited conditions (in descending order of frequency) were: mental health problems (18%, n=58), arthritis or rheumatism (17%, n=54), respiratory conditions (15%, n=43), visual impairment (13%, n=42), stroke (13%, n=42), cancer (13%, n=41), and Alzheimer's disease (8%, n=27). Notably, care recipients could have more than one of these conditions (e.g., frailty in old age and visual impairment). The number of conditions experienced by care recipients ranged from one to nine, with a mean of 1.8 (SD=1.3) conditions, see Figure 8. The majority of participants provided care for a person with one (44.3%), two (25.1%) or three conditions (13.1%).

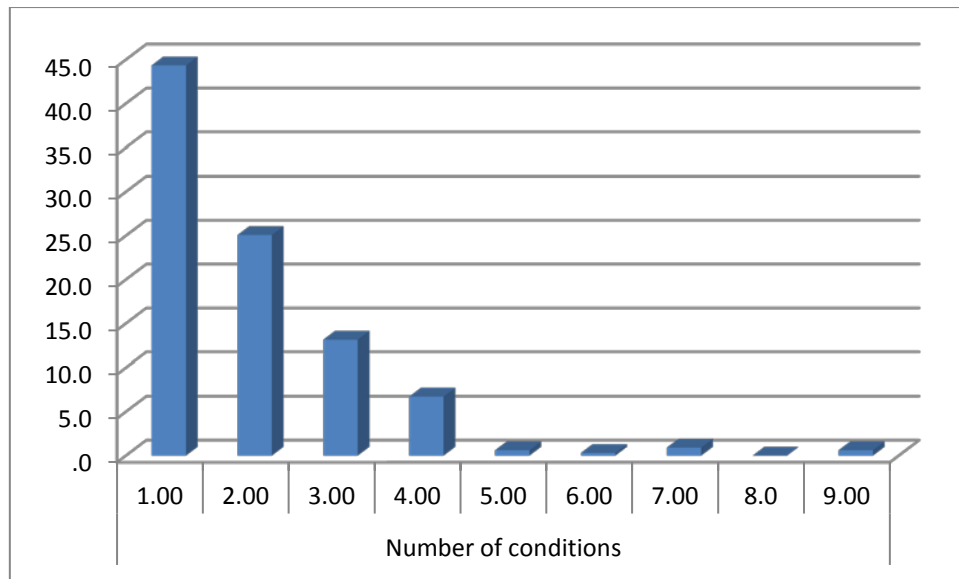


Figure 8. Proportion of participants caring for someone with one or more medical conditions

Caregiving and Health

The Relationship between Caregiving Status and Health

In this section, we examine whether there are any self-reported health differences between caregivers and non-caregivers. More specifically, we compare the mental and physical health of participants who: a) are currently caring, b) were caring but they have stopped because the care recipient has died or moved into a nursing care facility in the preceding 12 months, c) have cared but this was more than 12 months ago, and 4) have not previously cared for someone with a long-term illness, disability, or frailty. These caregiving categories recognise the changing nature of caregiving.

Self-reported health was primarily measured using the SF-36, a widely used measure of physical and mental health status. The SF-36 consists of 36 items, which measure eight components of health: physical functioning, role physical (role limitations due to physical problems), bodily pain, general health, vitality, social functioning, role emotional (role limitations due to emotional problems), and mental health. Higher scores mean better health. Sub-scales have also been combined to provide two summary scores for physical and mental health respectively. Scores are normed and standardised so that the population mean is 50. We also examine whether there are differences in the distribution of diagnosed medical conditions between the four groups of caregivers.

Figure 9 shows the mean scores obtained by the various caregiver status groups on the two summary health scales (physical and mental health).

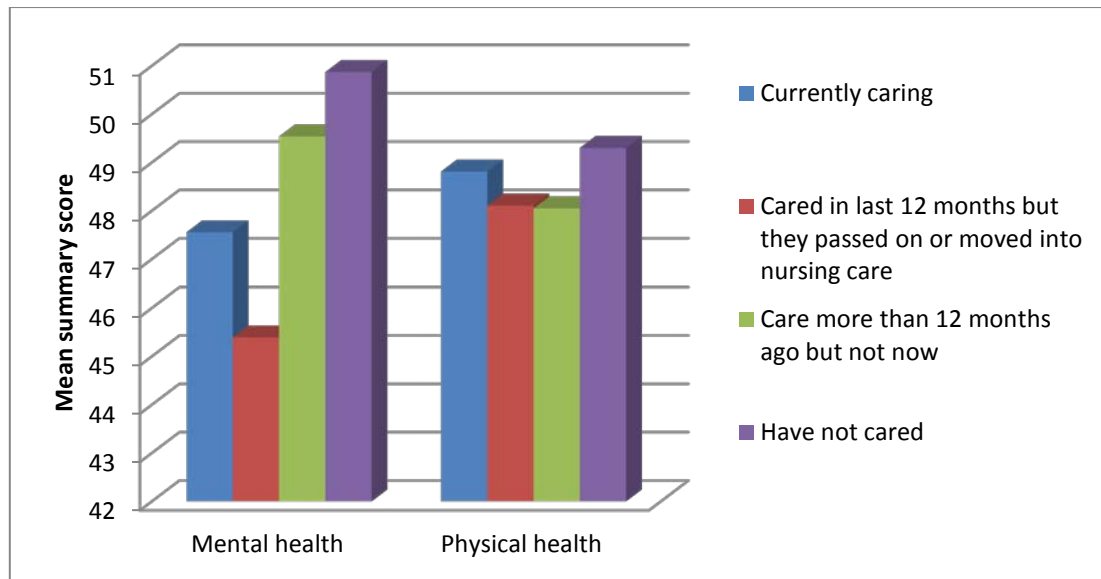


Figure 9. Mean physical and mental health summary scores for different caregiver status groups.

A Kruskal-Wallis ANOVA (N=1737) found that the caregiver groups' summary physical health scores were not significantly different. However, caregiver groups' summary mental health scores were significantly different ($p=.000$, N=1737). Recent caregivers had the worst mental health summary score; those who hadn't provided care before had the best mean mental health summary score. Mann-Whitney post-hoc comparison tests showed that current caregivers and those who'd stopped caregiving less than 12 months ago both had significantly lower mean scores than the group that had not previously cared.

Figure 10 shows the mean scores obtained by the caregiver status groups on the eight health components of the SF-36.

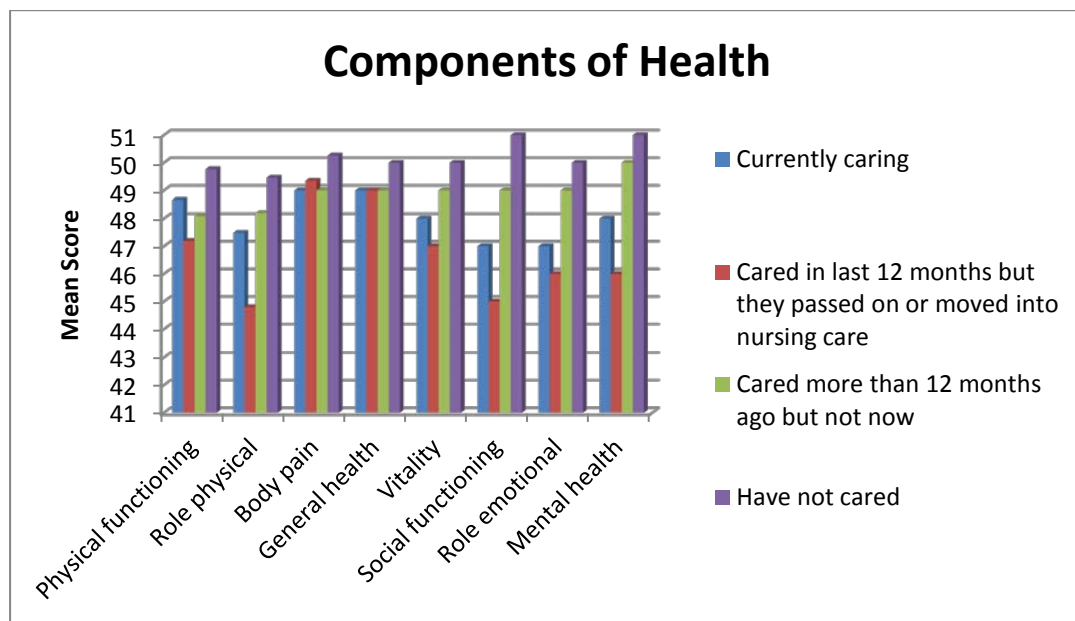


Figure 10. Mean health component scores for different caregiver status groups.

Kruskal-Wallis ANOVAs ($N=1803-1819$) detected significant differences between the caregiver group means for two of the physical health components: physical functioning ($p=.009$) and role physical ($p=.000$), and all of the mental health components: vitality ($p=.006$), social functioning ($p=.000$), role emotional ($p=.000$), and mental health ($p=.000$). For each of these six aspects of health, mean scores indicated that health was best for those who had not previously provided care. Interestingly, those who had been caregivers but the care recipient had died or moved into nursing care in the last 12 months consistently had the lowest mean scores (poorest health). Not only were the mean differences between these two caregiver groups statistically significant for each of these six aforementioned components of health, post-hoc comparisons found that mean differences between those currently caring and those who've never provided care were also significant for role physical, mental health, social functioning, and role emotional components of health. Indeed, for social functioning and role emotional, post-hoc tests found that all caregiver groups (current, caregiving ended less than 12 months ago, caregiving ended more than 12 months ago) had significantly lower scores than those who'd not cared before. For physical functioning, there was only a significant difference between those who had not provided care and those who had stopped providing care more than 12 months ago.

Although significant differences were found for several aspects of health, effect sizes ($f=.080-.153$) were generally small. In decreasing order of magnitude, effect sizes were: $f=.153$ for social functioning, $f=.147$ for role emotional, $f=.112$ for mental health, $f=.111$ for role physical, and $f=.080$ for vitality components of the SF-36. The mental health summary scale had an associated effect size of .142.

Self-reported health was also measured by the number of carers' diagnosed medical conditions. As is evident in Figure 11, those who hadn't previously cared had the least number of diagnosed medical conditions, on average, and those who'd cared more than 12 months ago had the most. Although a Kruskal-Wallis ANOVA ($N=1857$) found the mean number of diagnosed medical conditions varied significantly for the caregiver status groups ($p=.001$), a post-hoc comparison test found that the mean difference was only significant between those who had not cared previously and those who had cared more than 12 months ago. The associated effect size was very small ($f=.093$). There were no significant differences between those who had not cared and either those who were currently caring or had stopped caregiving less than 12 months ago.

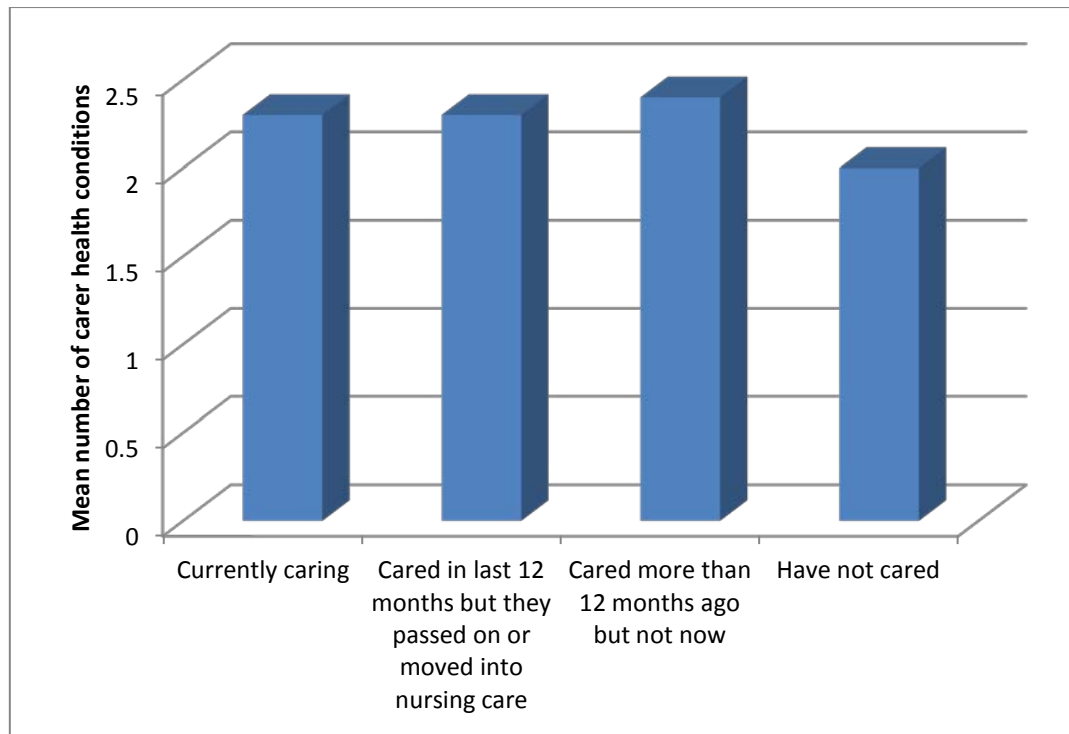


Figure 11. Number of diagnosed health conditions for different caregiver status groups.

Of all the diagnosed medical conditions that were included in the survey, chi square statistical tests found that only the frequency of arthritis ($p=.002$), depression ($p=.006$), chronic fatigue ($p=.019$), and anaemia ($p=.039$) varied significantly between caregiver groups. As can be seen in Table 1, those who hadn't previously provided care consistently had the lowest percentage for these diagnoses, and those who'd stopped providing care more than 12 months ago usually had the highest percentage of such diagnoses. However, effect sizes were all very small: arthritis ($w=.089$), depression ($w=.082$), chronic fatigue ($w=.073$), and anaemia ($w=.066$).

Table 1. Percentage of Participants of Different Caregiver Status with Medical Diagnoses which reached Statistical Significance

Medical condition	Cared >12 months ago	Recently cared	Currently caring	Have not provided care
Arthritis	34.8%	30.4%	31.0%	25.4%
Depression	12.7%	11.6%	8.9%	7.1%
Chronic fatigue	2.1%	1.4%	2.3%	0.5%
Anaemia	6.4%	5.8%	4.3%	3.2%

Finally, we examined health care utilisation as a measure of health. Health care utilisation questions enquired about: whether or not, and how many times, participants had seen a doctor in the last 12 months; whether participants had used a service or been admitted to hospital over the last 12 months, and how many times they'd been admitted for one night

or longer; and how many times participants had been a patient at a hospital emergency department in the last 12 months. A question also enquired about the number of prescription drugs currently being taken by participants. Statistical tests found a significant finding for having seen a doctor in the last 12 months ($p=.033$, $N=1822$, effect size ($w=.069$) very small) but not for the number of visits to a doctor ($p>.05$). More specifically, those who stopped caregiving less than 12 months ago and more than 12 months ago were more likely to have seen a doctor in the last 12 months. No differences were found for the number of prescription drugs being taken ($p>.05$), the number of times one had been a patient in a hospital emergency department ($p>.05$), whether or not one had used a hospital service or been admitted ($p>.05$), or the number of times one had been in hospital for one day or more.

Summary

Non-caregivers consistently had better mental health, as measured by the SF-36 mental health summary and component scores, than those who had cared or were currently caring. Those who'd stopped caregiving less than 12 months ago (because the care recipient died or went into a nursing care facility) consistently had the poorest mental health. Physical health, as measured by the SF-36 physical health summary score, did not differ between the groups. However, differences were found for two of the physical health components, with those who'd stopped caregiving less than 12 months ago faring most poorly. When diagnosed medical conditions were compared, those who'd stopped caregiving more than 12 months ago generally had the worst physical health; non-caregivers had the best physical health. As age is equivalent across the four caregiver groups ($p>.05$), this cannot explain the variations in mental and physical health. As will be discussed below, socioeconomic status did vary, however.

Length, Frequency, Amount, and Intensity of Caring and Health

Here, we report on whether length and intensity of caring are related to health using data for current caregivers and those that stopped caregiving in the last 12 months ($N=327$). First, we examined the strength and significance of correlations between length of caring (in years) and scores on either of the summary health scales. Although a significant correlation was found between length of time caring and the physical health summary score ($p=.033$, $N=308$), the correlation was small in strength ($r= -.122$). It was in the expected direction (i.e., the longer the period of caring, the worse one's physical health). Length of time caring and mental health summary score were not correlated. Next we examined the strength and significance of correlations between length of caring (in years) and scores for each component of health. All correlations approximated 0, which indicates that the length of time caring had no relationship with any particular aspect of health. All scatterplots indicated a reasonably random distribution of health scores, as opposed to a non-linear relationship of some kind. In summary, it seems that the relationship between length of time caring and

overall physical health is small for recent and current caregivers. General mental health and more specific components of health are not affected.

We next examined whether there were differences in health dependent on the frequency of care provided to the person with long-term illness, disability, or frailty. Using Kruskal-Wallis ANOVAs ($N=308-323$), we compared SF-36 summary health scores and component health scores for those providing care every day, several times per week, once a week, and once every few weeks or less. No significant differences were found between these groups for any summary or component health scores. This would suggest that there is not a relationship between frequency of care or time spent caring and health for those who are currently providing care and those who have only recently stopped providing care (i.e., either frequency of care and time spent caring does not affect carer health and/or carer health does not affect the frequency of care and time spent caring provided for current and recent carers).

We also examined whether there were differences in health dependent on the time spent providing care on each occasion. Using Kruskal-Wallis ANOVAs ($N=285-300$), we compared SF-36 summary health scores and component health scores for those who usually provided care all day and night, all day or all night, for several hours, or for about an hour on each occasion. Again, there were no significant differences found between these groups for any summary or component health scores.

Finally, we examined whether there were differences in health dependent on the intensity of care provided. Each current and recent caregiver participant was categorised as providing either high intensity care ($n=168$), moderate intensity care ($n=65$), or low intensity care ($n=65$) based on their frequency of care provision and the amount of care provided on each occasion combined. Interestingly, Kruskal-Wallis ANOVAs ($N=279-284$) indicated that there were no significant differences between these groups for any summary or component health score ($p>.05$).

Overall, we found that length, frequency, and intensity of care have no effect on aspects of health for those who are currently or have recently provided care to a family member with a long-term illness, disability, or frailty. The reason this occurs needs further investigation.

Relationship between Care Recipients' Health and Caregiver Health

Next we examined whether there were differences in carers' health dependent on the number of conditions care recipients' had. Using Kruskal-Wallis ANOVAs ($N=255-265$), we compared SF-36 summary and component health scores for those who currently or had recently provided care for a family member or friend with: one ($n=145$), two ($n=82$), three ($n=43$), and four or more ($n=30$) major medical health conditions. No significant differences were detected ($p>.05$).

The relationship between care recipient health conditions (e.g., Alzheimer's disease, age-related frailty, cancer, etc) and carer health was examined. Figure 12 shows the SF-36 physical and mental health summary scores of carers assisting people with the most common conditions. Participants caring for someone with a mental health problem or respiratory condition appear to have the worst mental health. Physical health was worst for caregivers caring for someone with a mental health problem.

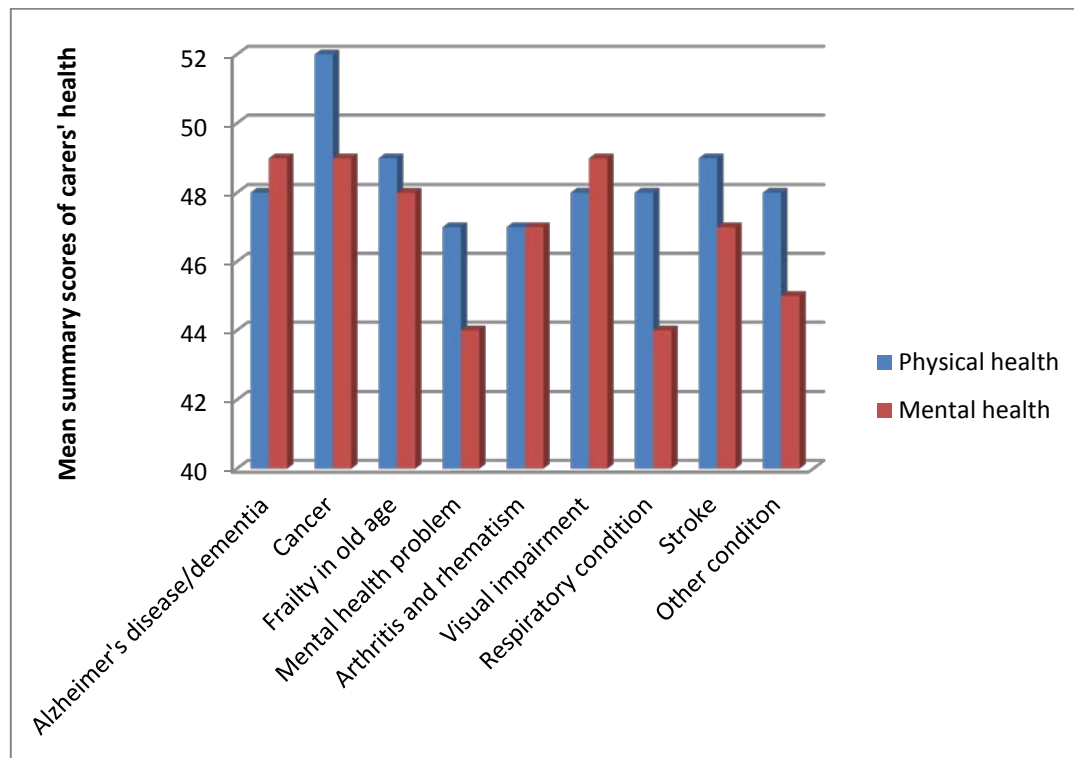


Figure 12. Mean physical and mental health summary scores according to care recipient conditions.

Statistical comparisons could not be made between care recipient health conditions as many participants cared for a family member with more than one condition (i.e., comparison groups were not independent from each other). Statistical comparisons were hence made between those caring and not caring for someone with each particular condition (using Mann-Whitney statistical tests). Significant carer health differences were found between those caring and not caring for someone with frailty in old age, cancer, mental health problems, respiratory disease, and arthritis. Table 2 shows the specific health components affected by each condition and the related effect sizes. Those caring for someone with frailty in old age, mental health problems, respiratory disease, and arthritis had worse health (on at least one health component or summary score) than those not caring for that respective condition. Caring for someone with mental illness negatively affected the largest number of health components (body pain, social functioning, role emotional, physical health summary score, and mental health summary score), followed by caring for someone with a respiratory condition. Interestingly, those caring for someone with cancer had better health (for role

physical, body pain, and vitality components) than those not caring for someone with cancer but caring for someone with another condition. These differences cannot be explained by age or socioeconomic differences between carers and non-carers of each condition, as these demographic variables were not significantly different between carers and non-carers of these conditions (using Mann-Whitney statistical tests, $p > .05$). Interestingly, despite other studies finding especially deleterious effects for Alzheimer's disease (e.g. Shulz et al., 1995), our study found no significant difference in health for those caring and not caring for someone with Alzheimer's disease. Although a chi square found that those caring for someone with Alzheimer's disease were significantly less likely to have the care recipient sharing the same home as them (24% vs 48% for those not caring for someone with Alzheimer's disease) and more likely to have the care recipient in a nursing home (44% versus 7% of those not caring for someone with Alzheimer's disease), place of residence was found not to be related to carer health, and so this factor is supposedly not bolstering the health of Alzheimer's carers relative to non-Alzheimer's carers. The small sample size of Alzheimer's carers did not allow a statistical comparison of health based on Alzheimer's care recipients' location.

Table 2. Health Components Affected by Caring for Someone with Various Health Conditions

Health condition	Affected aspects of health	Better or worse than comparison group	Effect size (r)
Frailty in old age	vitality, overall mental health	Worse	.121 & .133 small
Mental health problem	body pain, social functioning, role emotional, overall physical health, overall mental health	Worse	.123-.156 small
Arthritis & rheumatism	body pain	Worse	.134 small
Respiratory condition	vitality, role emotional, mental health, overall mental health	Worse	.116-.169 small
Cancer	role physical, body pain, vitality, overall physical health	Better	.116-.156 small

Summary

The number of conditions experienced by care recipients was not related to carer health. Although some caution is required due to the analytic methods that could be used, it would seem that some health conditions were more deleterious to carer health than others, particularly mental health problems and respiratory conditions. Surprisingly, the health of participants caring for someone with Alzheimer's disease was not significantly different than for those not caring for someone with Alzheimer's disease.

The Relationship between Caregiving and Health Behaviours

We examined whether the different caregiver groups differently engaged in exercise, alcohol consumption, tobacco smoking, and health service utilisation. We also compared their satisfaction with sleep and their average body mass index.

Exercise/Activity

We examined whether caregiver groups varied in the amount of time they spent: a) briskly walking, b) doing moderate physical activity, c) doing vigorous physical activity, and d) doing all of these activities, in the last week. These activities could take place at work, home, in the garden, recreationally, and/or in the context of sport and exercise. We also compared the number of days, in the previous week, they had engaged in doing at least 15 minutes of vigorous activity or at least 30 minutes of moderate activity or brisk walking. Kruskal-Wallis ANOVAs (N=1465-1636) detected no significant findings ($p>.05$), suggesting that different caregiver groups are similarly active.

Drinking Alcohol

We examined whether alcohol consumption varied according to caregiver status. The AUDIT-C hazardous screening test (Bush et al., 1998), which consists of three questions, was used to measure alcohol consumption and problem drinking. Chi squares (N=1340-1816) examining participants' responses on the three questions showed significant results for the frequency of alcohol consumption, ($p=.000$) and how often participants drank six or more drinks on an occasion ($p=.005$); the number of drinks consumed on a typical day when drinking was not significant ($p>.05$). Those who had never cared drank more often, and more frequently drank greater than six drinks on an occasion. Scores from these three questions were combined to create an AUDIT-C hazardous screening test score between 0 and 12; higher scores indicate more hazardous drinking. As shown in Figure 13, non-caregivers had the highest mean score ($M=3.29$, $SD=2.73$), followed by those who cared more than 12 months ago ($M=2.73$, $SD=2.52$), less than 12 months ago ($M=2.49$, $SD=2.44$), and currently ($M=2.32$, $SD=2.39$). A Kruskal-Wallis ANOVA (N=1714) found the scores on this latter measure to be significantly different between the caregiver groups ($p=.000$). The effect size ($f=.142$) was small, however. Post-hoc comparison tests (Mann-Whitney tests) found the

differences to be between non-carers and current carers ($p=.001$), and non-carers and those who used to care more than 12 months ago ($p=.000$).

Finally, participants' AUDIT-C scores were used to categorise drinking as normal or problematic: a score of 3 or more for women, or 4 or more for men, suggests a potential drinking problem; scores of 8 or more indicate alcohol dependence. A chi square test ($N=1710$) indicated that the proportion of problem drinkers varied according to caregiver status ($p=.001$). The non-carer group had the largest proportion of potential problem drinkers (50.9% vs 37.1%-45.2%); the effect size ($w=.098$) was again small. The proportion of participants with alcohol dependence (a score of at least 8) did not vary according to caregiving status ($p>.05$).

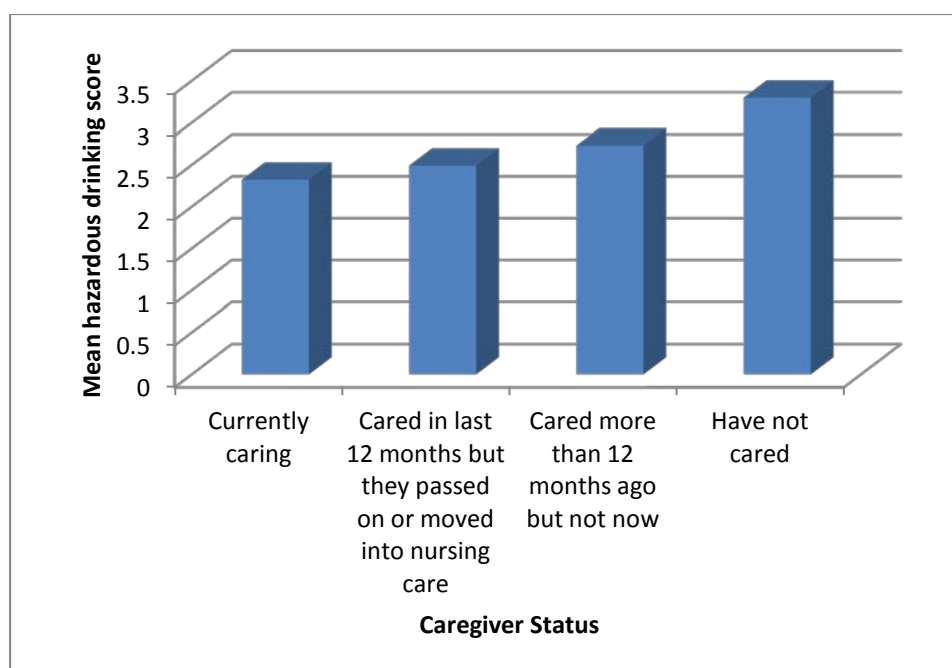


Figure 13. Mean hazardous drinking score according to caregiver status.

Tobacco smoking

Overall, 12.4% of the sample that answered the caregiving status question classified themselves as regular tobacco smokers. Although those that used to care more than 12 months ago had a slightly higher proportion of regular smokers in the group (15.4% vs 11.0%-11.8% for the other groups; see Figure 14), a chi square ($N=1791$) found the proportion of smokers and non-smokers for caregiver groups to be similar ($p>.05$).

Furthermore, a chi square ($N=221$) found that the number of regular smokers smoking 1 to 10, 11 to 20, and more than 20 cigarettes per day was similar in each group ($p>.05$). The proportion of participants that had ever been a regular smoker was also found to be similar across the groups ($N=1550$, $p>.05$).

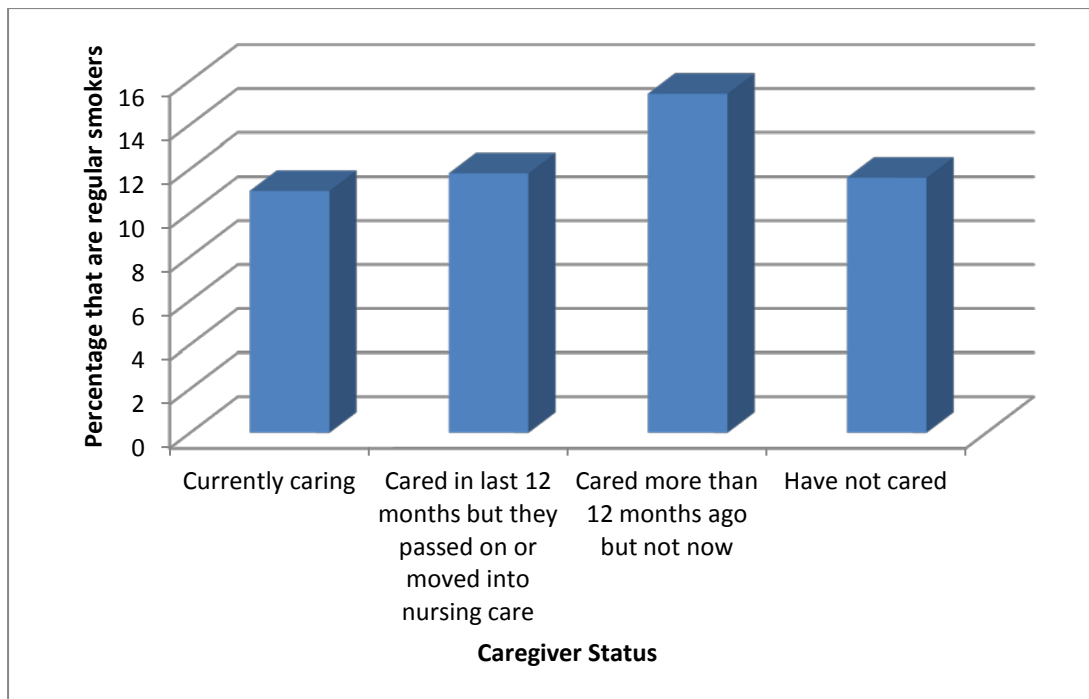


Figure 14. Percentage of regular smokers according to caregiver status

Health care utilisation

Participants were asked whether or not, and how often, they had seen a doctor (a general practitioner or family doctor, not a specialist) about their own health in the last 12 months. They were also asked whether they have a doctor or place that is responsible for their health care. Chi square tests indicated a significant finding for having seen a doctor in the last 12 months ($p=.033$, $N=1813$) only. As seen in Figure 15, the percentage of participants who had seen a doctor in the last 12 months was highest for those who had given up caregiving over 12 months ago (93.3%) and those who had given up caregiving less than 12 months ago (92.5%); those who had never cared were slightly less likely to have seen a doctor in the last 12 months (88.4%). It is arguable whether this reflects preventative, proactive readiness to utilise health care services or reactive utilisation due to having poorer health. The latter explanation is quite likely because those who had given up caregiving less than and more than 12 months ago had the worst mental and physical health of the caregiver groups. Notably, the effect size for the relationship between caregiver status and visiting a doctor in the last 12 months was very small ($w = .069$).

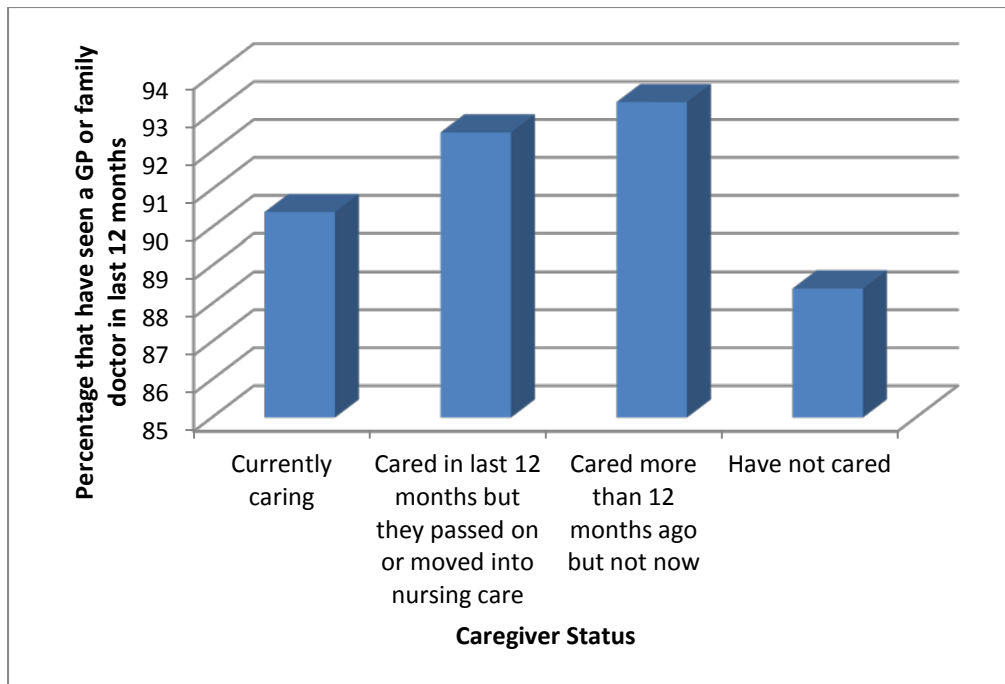


Figure 15. Percentage of each caregiver status group that has seen a general practitioner or family doctor in the last 12 months.

Sleep

Participants were asked how satisfied they were with their sleep (from 1, very dissatisfied, through to 5, very satisfied). Although a Kruskal-Wallis ANOVA ($N=1819$) found a significant difference in sleep satisfaction for the different caregiver groups ($p=.042$), the mean scores were quite similar, and the effect size was very small ($f = .063$). As shown in Figure 16, those who had stopped caring less than 12 months ago had the lowest mean sleep satisfaction score. However, this may be connected to their lower mean mental health scores, not poor self-care.

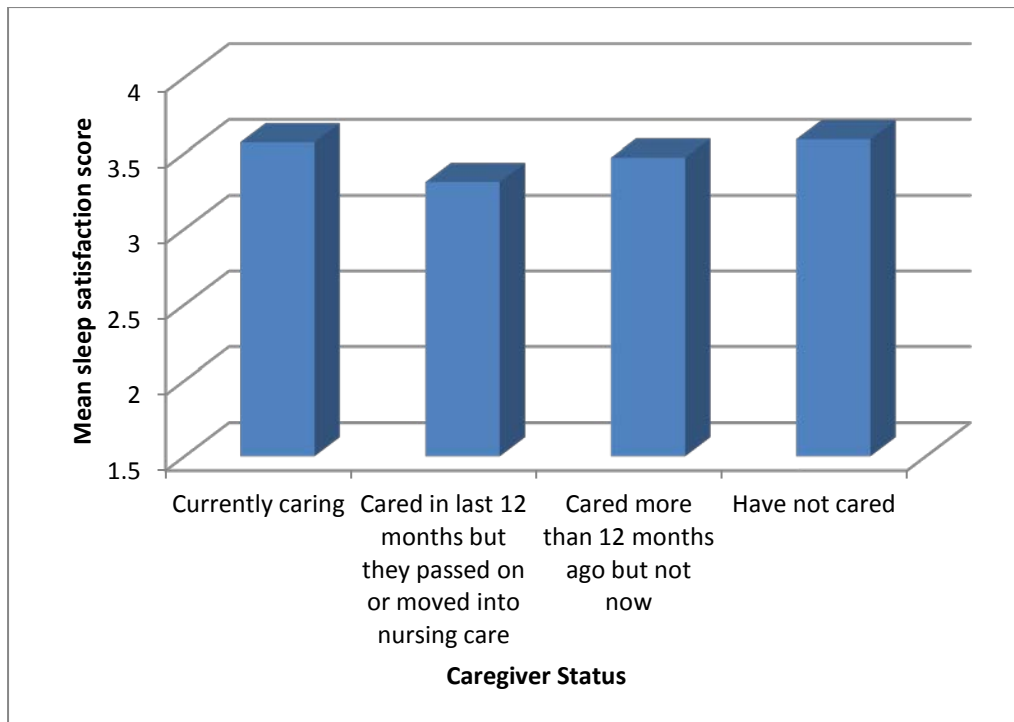


Figure 16. Mean sleep satisfaction score according to caregiver status.

Body Mass Index

The mean body mass index of the sample that answered the caregiving status question was 28.33 (SD=5.85), which falls within the overweight or pre-obese category. The proportion of the sample classified as underweight, normal, overweight, and obese was 1.0%, 28.7%, 38.5%, and 31.8%, respectively. A Kruskal-Wallis ANOVA (N=1712) found the caregiver groups' body mass index scores to be equivalent ($p>.05$). A chi square (N=1712) found the proportion of participants in the underweight, normal, overweight, and obese categories to be similar for the various caregiving groups ($p>.05$).

Summary

Overall, engagement in health behaviours was quite similar across the caregiving groups. The groups did not differ in their level of exercise, smoking behaviour, or body mass index. Alcohol consumption did vary, however. Though differences were only small in magnitude, those who'd never been caregivers consumed alcohol more often, were more likely to binge (consume six or more drinks), and had a higher proportion of potential problem drinkers. This may be due to a greater proportion of this group having higher economic living standards (see Figure 17), which in turn is positively related to alcohol consumption. Although there were some minor differences in sleep satisfaction and visiting a doctor, there was some concern about whether these measures captured self-care related health behaviours.

Overall, it appears unlikely that poorer mental and physical health of caregivers is explained by differential engagement in health behaviours. Further analyses would have to be conducted to rule this out, however.

The Relationship between Caregiving and Socioeconomic Status

Socioeconomic status has been found to be closely related to health (Marmot, 2004). This was also the case for the present study. Economic living standards, as measured by ELSI-SF, was clearly associated with both physical and mental health: correlations between ELSI-SF scores and all SF-36 component and summary scores were significant and medium or medium to large in strength ($r=.308-.403$, $p=.000$). Indeed, a perfect gradient existed for all mean summary and component SF-36 scores and the different categories of economic living standard (severe hardship, significant hardship, some hardship, fairly comfortable, comfortable, good, and very good). Education was also significantly associated with good health; those with both secondary and post-secondary/tertiary education consistently had better physical and mental health, as measured by all SF-36 component and summary scores ($p=.000-.012$); effect sizes were small to medium ($f=.074-.244$). Finally, employment status significantly affected all physical and mental health component and summary scores ($p=.000$); effect sizes were medium to large ($f=.220-.381$). Generally, health was best for those employed full-time, followed by those employed part-time and retired; people classified as ‘other’ (homemakers, students, the unemployed, and those who can’t work due to disability) had the worst health. Due to the implications of the relationship between socioeconomic status and health, it is important to consider the relationship between caregiving status and socioeconomic status.

Socioeconomic status was measured using the short form of the Economic Living Standards Index (ELSI-SF) (Jensen, Spittal, & Krishnan 2005), and questions about education, work status, and number of hours in paid employment per week. All four caregiver status groups were compared. Unfortunately, individual and household income could not be considered for analysis.

Economic Living Standards

ELSI-SF scores can range between 1 (severe hardship) and 7 (very good). On average, the sample that answered the caregiver status question had a mean ELSI-SF score of 5.19 ($SD=1.48$), which equates with a “comfortable” standard of living. Figure 17 compares economic living standard for each of the caregiving groups.

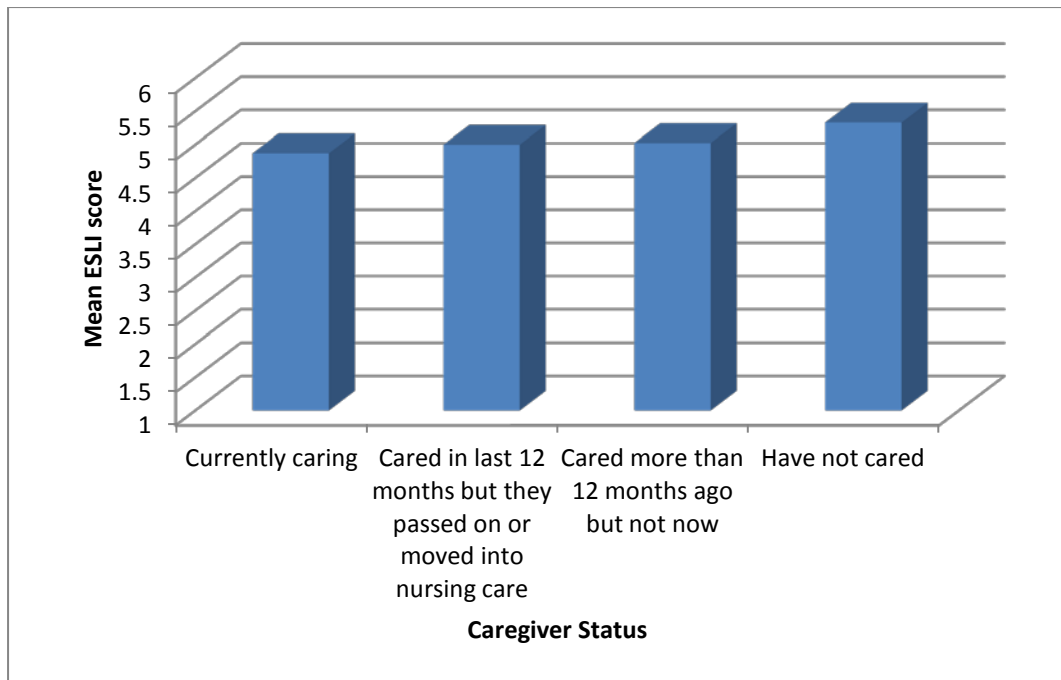


Figure 17. Caregiver status groups' mean ELSI-SF scores.

As is evident, those who had not cared before had the highest mean ELSI-SF score ($M=5.33$, $SD=1.36$); current caregivers had the lowest mean score ($M=4.87$, $SD=1.69$). A Kruskal-Wallis ANOVA ($N=1674$) found differences between the groups to be significant. The effect size ($f=.105$) was small, however. Post-hoc comparisons (Mann-Whitney tests) indicated that non-caregivers' mean ELSISF score was significantly different than the mean scores of both current caregivers and those who stopped caring more than 12 months ago ($p=.003$).

Education

When all four caregiver groups were compared on education status, a chi square ($N=1829$) found the distribution of secondary and post-secondary/tertiary qualifications to vary significantly ($p=.025$); the effect size was small ($w=.101$). The group which had stopped caregiving in the last 12 months was less educated overall. As is evident in Figure 18, a higher proportion of this group had no secondary qualifications (38.8% vs 25.8%-31.1%), and a smaller proportion had tertiary qualification (23.9% vs 30.0%-37.4%). It is difficult to explain this finding, especially considering that current caregivers were relatively well educated compared to the other groups. It is possibly a chance effect (Type 1 error) associated with the recently stopped caregiver group having a relatively small sample size ($n=67$).

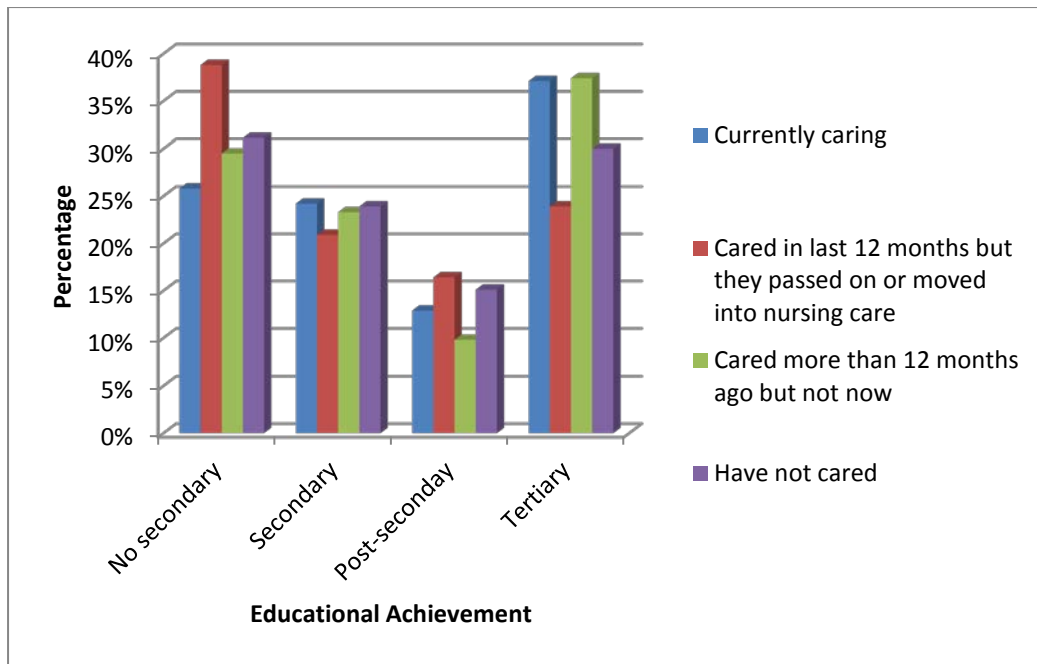


Figure 18. Secondary and post-secondary educational achievements according to caregiver status.

Employment

The proportions of caregiver groups in full-time work (including self-employment), part-time work (including self-employment), retirement (no paid work), and ‘other’ situations (e.g., full-time homemaking, full-time study, unemployment, inability to work due to health or disability) is shown in Figure 19. Non-caregivers had the highest level of full-time employment and were least likely to be classified as ‘other’. In contrast, those who’d stopped caregiving less than 12 months ago had the lowest level of full-time paid employment and the highest proportion of participants in retirement and ‘other’ situations. A chi square ($N=1666$) found significant variations in employment status for the four caregiver groups ($p=.018$); the effect size was reasonably small ($w=.110$). It is important to point out that approximately 60% of current caregivers worked either full-time or part-time.

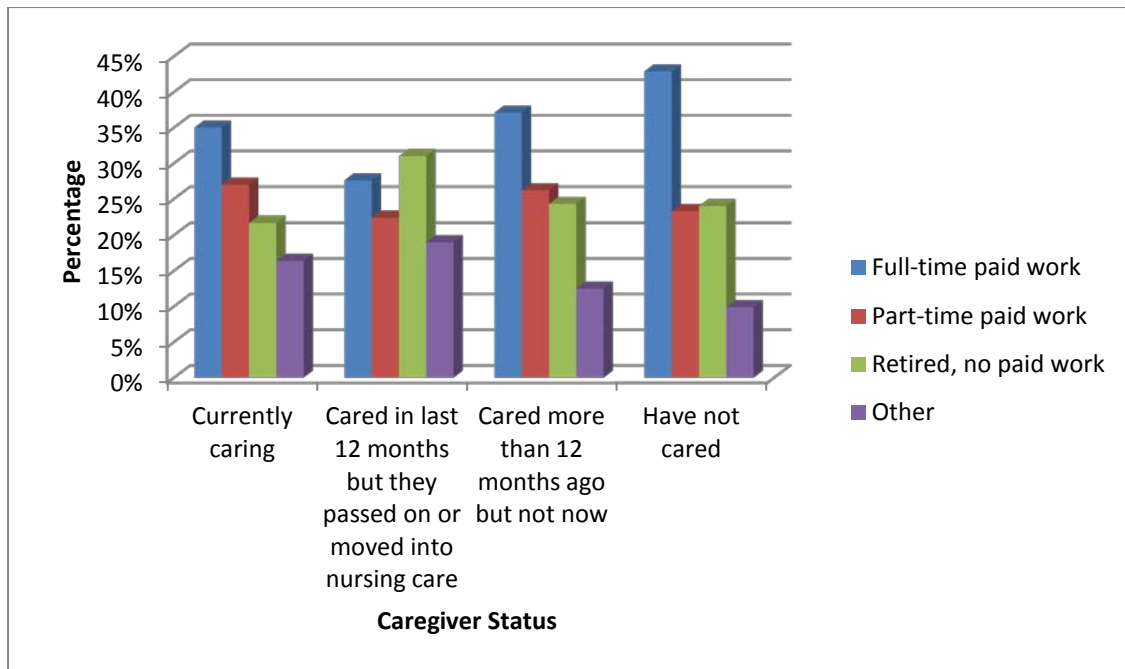


Figure 19. Employment status according to caregiver status.

Participants in paid work (N=1019) indicated they were employed 34.95 hours per week, on average (SD=14.86). As shown in Figure 20, non-caregivers were employed for more hours per week (M=36.20, SD=14.53) than current caregivers (M=32.45, SD=15.43), those that stopped caregiving in the last 12 months (M=30.82, SD=13.86), and those that stopped caregiving over 12 months ago (M=33.32, SD=15.21). A Kruskal-Wallis ANOVA revealed that paid employment hours were significantly different for the different caregiving groups ($p=.021$). The effect size was small, however ($f=.101$).

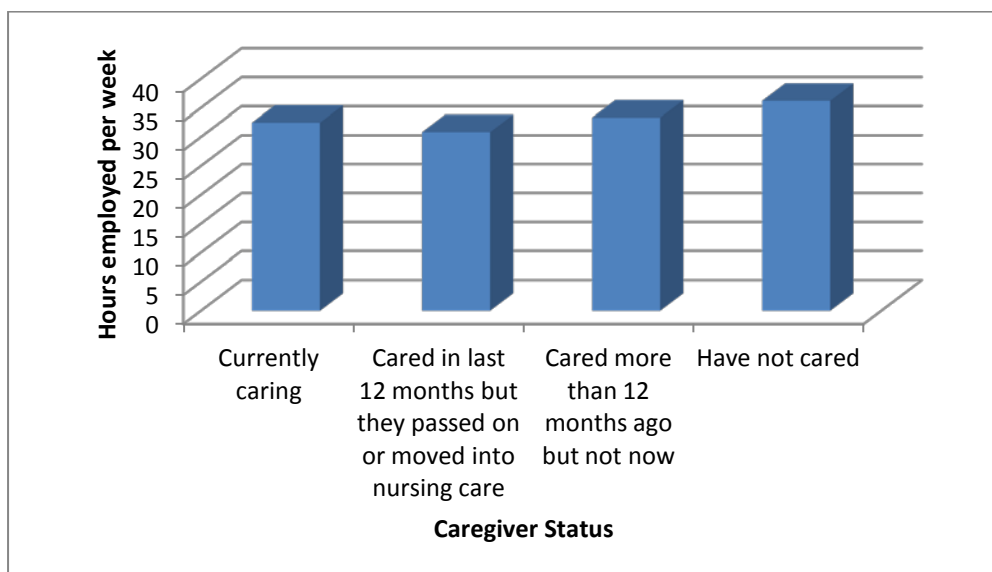


Figure 20. Caregiver status groups' number of hours employed per week for those in paid work.

Summary

Non-caregivers were more likely to be in full-time work, worked more hours, and had the highest economic living standard of all caregiver groups. Those who'd stopped caregiving in the last 12 months had the lowest level of full-time employment and employment hours; they were also less educated than the other groups (possibly by chance). Current caregivers had the lowest economic living standard, although previous caregivers' socioeconomic standard was comparable, and again, lower than non-caregivers. Although effect sizes were small, these findings indicate that caregiving affects socioeconomic status or socioeconomic status affects likelihood of taking up the caregiving role. The findings regarding educational achievement would suggest that lower educational achievement (in itself) has no effect on the likelihood of becoming a caregiver, however it is possible that lower socioeconomic status partly explains the poorer physical and mental health of caregivers. Further analyses need to be conducted to ascertain this.

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