Estimating the Impact of Caregiving and Employment on Well-Being

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ABSTRACT
The aging demographic profile of the American population coupled with the increased burden of chronic disease is increasing the demand for care – both within the healthcare system and within the home. As a result of these trends, a large proportion of the population is facing the competing demands of working and caring for a loved one. In the study presented here, we investigated the impact of informal caregiving, employment, and the combination of these responsibilities on the overall well-being of 243,997 Americans surveyed using the Gallup-Healthways Well-Being Index® (GHWBI). Results demonstrated that caregivers typically have lower levels of well-being compared with non-caregivers of the same employment status; however, employment is associated with greater well-being, even among caregivers. These findings were fairly consistent across all sub-domains of well-being, demonstrating that employment has a broad-based positive affect on the lives of workers, and that the beneficial impact of employment on well-being often supersedes any detrimental impact of caregiving. In conclusion, the higher well-being reported by employed caregivers compared with their non-employed counterparts suggests that there are benefits of employment, such as financial security and social support, that can ease the burden of the caregiving role.

INTRODUCTION
The aging of the baby boomer generation is rapidly changing the age profile of the United States. Between the years of 2000 and 2030, the number of Americans over 65 will more than double, increasing from 35.1 million in 2000 (12.4 percent of the population) to 71.5 million in 2030 (19.6 percent of the population). Further, this group will be increasingly burdened by chronic disease that can be physically disabling. Despite chronic disease trends, longevity continues to increase over time. Life expectancy data from the Centers from Disease Control shows progressive increases over only twenty years (1986, 74.7 yrs; 1996, 76.1 yrs; 2006, 77.7 yrs). The interplay of these trends leads to the logical conclusion that there is a large and growing elderly population with demanding care needs that extend for many years.

Of the approximately 52 million Americans who act as a caregiver to an adult who is ill or disabled, approximately 59% are employed. Although more women than men still play this role (59% to 75%), there was a 50% increase in the number of male caregivers over the ten year period from 1984 to 1994. That so many Americans must balance their responsibilities as an employee and as a caregiver with their day-to-day lives and other family responsibilities raises the question of how individuals are affected by these roles.

Previous research has demonstrated that work performance is diminished when an individual takes on the role of caregiver. A positive correlation exists between work productivity loss and caregiving-related strain, an effect heightened with intensity of caregiving and the medical care needs of the care-recipient. Caregiving has shown to reduce work productivity by 18.5% and increase the likelihood of leaving the workforce. Further, this responsibility takes a toll on a caregiver’s life outside the workplace. Caregivers, regardless of employment status, report that productivity in activities of daily life is reduced by 27.2% as a result of caregiving responsibilities, and that the effect on personal life is 3 or more times greater than the effect on employment.

Prior research has shown that caregiving does not affect all caregivers equally since the demands of the role vary widely. Caregiving is a career in which level-of-effort progresses with time. As shown in Figure 1, caregiving often begins before a family member even recognizes that they are providing support with minor activities, such as simply ‘checking in’ with a loved one. As the older person becomes frailer, the need for support grows. In many cases, declining health or a catastrophic event, such as a fall, increase care requirements to include around-the-clock help with daily activities and home medical care.
Logically, as the caregiving career progresses in this manner, the increased demands would magnify the overall impact that this role has on many different aspects of the caregiver’s life.

Existing research on the effects of caregiving has focused on specific elements of the caregiver’s life, or on relatively small groups of caregivers that have certain characteristics. Using the Well-Being Index as a tool, this study is the first to demonstrate the impact that caregiving and employment have on well-being on a national level. Further, through analysis of specific elements of well-being, we provide a clear picture of the magnitude of effect on the constructs that contribute to overall well-being.

**METHODS**

_Data Collection_

Study data was collected between January 2 and December 31, 2008 using the Gallup-Healthways Well-Being Index (GHWBI) survey. The survey was administered telephonically by live interviewers employed by Gallup. Random digit dialing was used to reach individuals, via land lines or cell phones, throughout the United States. Only persons aged 18 years or more were eligible for the survey and the survey was administered in Spanish when necessary.

Interviewers completed approximately 1,000 surveys per day over the twelve month time period, working seven days a week from 4:00 PM to 9:00 PM, with the exception of holidays. A total of 355,334 surveys were completed. The interviewers completed each structured interview in 15 minutes, on average. Survey data was weighted by Gallup to match targets from the U.S. Census Bureau by age, region, gender, education, ethnicity, and race. The final weighted survey results used in this analysis are estimated to represent 98% of the full U.S. adult population with a margin of error of ± 0.2%.

The GHWBI is a comprehensive assessment tool containing over 80 questions on evaluative and experienced measures of well-being, in alignment with previously published guidelines. The survey is scored as a whole (composite score) and for each survey domain in which questions are categorized. These domains, or sub-indexes, are as follows.

**Sub-indexes:**

- **Life Evaluation Index:** This index combines the evaluation of one’s present life situation with one’s anticipated life situation in 5 years and is based on Cantril’s Self-Anchored Striving Scale.
- **Emotional Health Index:** This index reflects the daily affective experiences of survey respondents. It also includes one item that probes for prior history of diagnosed depression.
- **Physical Health Index:** This index measures both acute and chronic disease as well as physical limitations, obesity, and energy level.
- **Healthy Behavior Index:** This index evaluates lifestyle habits that affect health including smoking, healthy diet, fruit and vegetable intake, and exercise.
- **Work Environment Index:** This index measures workers’ feelings and perceptions about their work environment. The items cover job satisfaction, the ability to use individual strengths at work, and aspects of supervision. This sub-index score is only calculated for the percentage of the population that is working.
- **Basic Access Index:** This index measures access to basic needs including food, shelter, and healthcare, a safe and satisfying place to live, and perceptions of the community.

The composite score and sub-index scores were calculated using the methodology described in the GHWBI Methodology Report. Briefly, all items were scored on a 0 to 100 scale such that a higher score was indicative of higher subjective well-being for each of the sub-indexes. At the individual level, composite scores were calculated as the un-weighted average of all sub-index scores.

**Study Population**

The eligible population for this study (n = 243,997) included survey respondents of working age, between 18 and 64 years, and excluded all individuals with incomplete data. The study population was categorized into four groups for analysis: (1) individuals who were both caregivers and employed (n = 33,481); (2) individuals who were caregivers and non-employed (n = 12,817); (3) individuals who were non-caregivers and employed (n = 150,570); and (4) individuals who were non-caregivers and non-employed (n = 47,129). All analyses were performed using SAS software (SAS Institute Inc., Cary, NC). Although all reported data are weighted, reported sample sizes are un-weighted unless otherwise specified.
Analysis

Differences between group means were statistically tested using one-way Analysis of Variance (ANOVA). Since, using GHWBI guidelines, the composite score was calculated as a population metric, individual level scores were not initially available to conduct between-group analysis. Thus, for the purpose of comparing scores between the four groups, we modified the score calculation in order to create individual level scores and perform the ANOVA testing.

When comparisons using ANOVA proved significant, this test was followed with Tukey’s multiple comparison test to determine which of the groups were significantly different from one another. Analysis of the Work Environment Index, for which the comparison included only two groups, was performed using an independent sample t-test.

In addition to evaluations of composite and sub-index scores, the four groups were further compared on specific individual survey items including rates of diagnosed depression, evaluation of standard of living, and mood. Statistical analysis of depression and standard of living was performed using Chi Squared tests; the mood analyses were descriptive in nature.

RESULTS

Among the study population, 75.4% were employed, 19.0% were caregivers, and 13.7% had both roles. Descriptive statistics and demographic information for each of the study groups are shown in Table 1.

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**TABLE 1: Study Group Characteristics and Weighted Demographics**

<table>
<thead>
<tr>
<th></th>
<th>Caregiver</th>
<th></th>
<th>Non-Caregiver</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Employed</td>
<td>Non-Employed</td>
<td>Employed</td>
<td>Non-Employed</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>33,481</td>
<td>12,817</td>
<td>150,570</td>
<td>47,129</td>
</tr>
<tr>
<td><strong>%</strong></td>
<td>13.7%</td>
<td>5.3%</td>
<td>61.7%</td>
<td>19.3%</td>
</tr>
<tr>
<td><strong>Average Age</strong></td>
<td>43.3</td>
<td>46.0</td>
<td>40.5</td>
<td>44.3</td>
</tr>
<tr>
<td><strong>Gender (% Female)</strong></td>
<td>51.8%</td>
<td>61.7%</td>
<td>43.9%</td>
<td>60.8%</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>1.4%</td>
<td>0.8%</td>
<td>1.8%</td>
<td>1.3%</td>
</tr>
<tr>
<td>Black</td>
<td>12.6%</td>
<td>14.4%</td>
<td>9.4%</td>
<td>11.8%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>12.8%</td>
<td>12.6%</td>
<td>11.0%</td>
<td>15.1%</td>
</tr>
<tr>
<td>White</td>
<td>69.1%</td>
<td>67.5%</td>
<td>74.7%</td>
<td>68.3%</td>
</tr>
<tr>
<td>Other</td>
<td>4.1%</td>
<td>4.7%</td>
<td>3.1%</td>
<td>3.5%</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than High School</td>
<td>7.7%</td>
<td>18.6%</td>
<td>5.6%</td>
<td>18.3%</td>
</tr>
<tr>
<td>High School Diploma</td>
<td>27.9%</td>
<td>35.0%</td>
<td>25.6%</td>
<td>33.4%</td>
</tr>
<tr>
<td>Tech/Voc School</td>
<td>7.2%</td>
<td>6.6%</td>
<td>6.5%</td>
<td>6.1%</td>
</tr>
<tr>
<td>Some College</td>
<td>24.6%</td>
<td>22.3%</td>
<td>24.2%</td>
<td>22.8%</td>
</tr>
<tr>
<td>College Graduate</td>
<td>18.0%</td>
<td>10.3%</td>
<td>21.7%</td>
<td>12.0%</td>
</tr>
<tr>
<td>Post Graduate School</td>
<td>14.7%</td>
<td>7.2%</td>
<td>16.4%</td>
<td>7.4%</td>
</tr>
<tr>
<td><strong>Monthly Income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under $1,000</td>
<td>5.4%</td>
<td>26.0%</td>
<td>4.0%</td>
<td>26.2%</td>
</tr>
<tr>
<td>$1,000 to $1,999</td>
<td>13.6%</td>
<td>22.2%</td>
<td>10.9%</td>
<td>20.1%</td>
</tr>
<tr>
<td>$2,000 to $2,999</td>
<td>15.1%</td>
<td>14.5%</td>
<td>13.3%</td>
<td>13.6%</td>
</tr>
<tr>
<td>$3,000 to $3,999</td>
<td>13.3%</td>
<td>9.8%</td>
<td>12.6%</td>
<td>9.9%</td>
</tr>
<tr>
<td>$4,000 to $4,999</td>
<td>11.0%</td>
<td>7.4%</td>
<td>11.8%</td>
<td>7.3%</td>
</tr>
<tr>
<td>$5,000 to $7,499</td>
<td>18.5%</td>
<td>9.3%</td>
<td>21.0%</td>
<td>10.7%</td>
</tr>
<tr>
<td>$7,500 to $9,999</td>
<td>18.0%</td>
<td>3.3%</td>
<td>9.6%</td>
<td>4.0%</td>
</tr>
<tr>
<td>$10,000 and over</td>
<td>15.0%</td>
<td>7.5%</td>
<td>16.8%</td>
<td>8.3%</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>21.6%</td>
<td>22.7%</td>
<td>22.8%</td>
<td>23.1%</td>
</tr>
<tr>
<td>Married</td>
<td>57.4%</td>
<td>50.7%</td>
<td>58.9%</td>
<td>50.6%</td>
</tr>
<tr>
<td>Separated</td>
<td>2.8%</td>
<td>4.3%</td>
<td>2.2%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Divorced</td>
<td>11.3%</td>
<td>13.4%</td>
<td>9.8%</td>
<td>12.9%</td>
</tr>
<tr>
<td>Widowed</td>
<td>1.9%</td>
<td>4.2%</td>
<td>1.6%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Domestic Partner</td>
<td>4.9%</td>
<td>4.8%</td>
<td>4.7%</td>
<td>5.4%</td>
</tr>
</tbody>
</table>
Composite Well-Being Scores
Our analysis demonstrated that there was a significant group-level effect on composite scores, \( p < 0.0001 \). Specific between group differences also proved significant. Table 2 outlines the weighted mean scores for each of the four study groups; as a benchmark for comparison, the population mean for all respondents \( (n = 355,334) \) during the same time period are shown. We found that both the employed caregiver and employed non-caregiver groups had a significantly higher composite mean than either the non-employed caregiver or the non-employed non-caregiver groups. Within each employment status, the composite mean for non-caregivers was significantly higher than for caregivers.

Sub-Index Scores
The group-level effect proved significant \( (p < 0.0001) \) for each of the domains of well-being. With the exception of the Healthy Behavior Index, average scores for these sub-indexes followed the same pattern as the composite score, and all between group differences were statistically significant. Scores on the Healthy Behavior Index were different from the other domains in that employed caregivers had higher average scores than employed non-caregivers, although these groups remained the top two in this score ranking. Additionally, for the Healthy Behavior Index the difference between the non-employed caregiver group and non-employed non-caregiver group means was not significant, as it was for the other sub-indexes.

Specific Survey Items
Daily Mood
The GHWBI defines daily mood by measuring the percentage of respondents who, on the day before they were surveyed, experienced a lot of happiness and enjoyment without a lot of stress and worry compared with the reverse of this – the percentage of individuals experiencing a lot of worry and stress without any happiness and enjoyment. Overall, a larger percentage of respondents in the employed non-caregiver group reported experiencing a lot of happiness and enjoyment and a lower level of worry and stress when compared to the other groups. The employed caregiver and non-employed non-caregiver groups had similar percentages reporting a lot of happiness and enjoyment; however, of these two groups the non-employed non-caregiver group had nearly a six percentage point higher rate of worry and stress. The non-employed caregiver group had the least favorable scores in both measures of mood (Figure 2).

Depression
A comparison of the percent of respondents diagnosed with depression among the four groups found a significant effect \( (p < .0001) \); however, the effect size was small, \( V = .14 \). As shown in Figure 3, the non-employed caregiver group had a significantly higher percentage of individuals diagnosed with depression than any other group. The two employed groups had a significantly lower rates of depression compared with the non-employed groups (Figure 3).

TABLE 2: Average Composite and Sub-Index Well-Being Scores

<table>
<thead>
<tr>
<th></th>
<th>Caregiver</th>
<th>Non-Caregiver</th>
<th>National</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Employed</td>
<td>Non-Employed</td>
<td>Employed</td>
</tr>
<tr>
<td>Composite Score</td>
<td>64.39</td>
<td>57.15</td>
<td>68.00</td>
</tr>
<tr>
<td>Life Evaluation Index</td>
<td>39.50</td>
<td>25.26</td>
<td>47.29</td>
</tr>
<tr>
<td>Emotional Health Index</td>
<td>77.35</td>
<td>67.24</td>
<td>81.00</td>
</tr>
<tr>
<td>Physical Health Index</td>
<td>76.74</td>
<td>61.16</td>
<td>82.26</td>
</tr>
<tr>
<td>Healthy Behavior Index</td>
<td>62.43</td>
<td>60.38</td>
<td>61.34</td>
</tr>
<tr>
<td>Work Environment Index</td>
<td>49.47</td>
<td>n/a</td>
<td>51.19</td>
</tr>
<tr>
<td>Basic Access Index</td>
<td>80.83</td>
<td>71.71</td>
<td>84.95</td>
</tr>
</tbody>
</table>
example, it is often easier to cook one healthy meal and follow
the diet prescribed for the caregiving recipient rather than
to cook two separate meals. A significant difference did not
emerge between the two non-employed groups. Previous
research has shown that caregiving is associated with certain
healthy behaviors, but not others and that level of caregiving
effort may influence the likelihood of engaging in healthy
behaviors. Further research will be necessary to elucidate
the interplay of factors among the groups that impact healthy
behaviors.

We found that employment was associated with greater
well-being among both caregivers and non-caregivers and
appeared to have a greater overall impact on well-being
measures than did the caregiving role. This association could
result from general differences in the characteristics of the
groups. For example, employed respondents in this study
were younger, on average, than non-employed respondents.
However, employment can benefit the caregiver in multiple
ways. First, time spent at work serves as a respite from the
responsibilities of caregiving. A study of female employed
caregivers found that greater time investment in work buffered
the women from the negative effects of caregiving stress.16
Second, working adds to the financial and social resources
available to the caregiver – resources that are generally in
greater supply for individuals who invest more time in their
job.16 Consistent with this finding, our results showed higher
basic access scores among employed individuals, indicating
that they were more likely to have access to fresh fruits and
vegetables, healthcare, medicines, and to be satisfied with the
city where they live.

Although employment can be beneficial to caregivers, the
reverse is generally not true. We show here that caregiving
was associated with additional stress, which is consistent with
prior findings that work performance and employee retention
are negatively affected when workers take on the role of
caregiver. However, employers have the opportunity
to mitigate these effects through workplace policies and
programs that provide options for adapting work routines
to complement caregiving responsibilities.19 Caregivers in
jobs that provide access to flexible hours, unpaid family
leave, and paid sick or vacation days are more likely to remain
employed and maintain work hours over a two-year period.8
Additionally, workplace wellness programs can provide an
outlet and resource to help employees maintain their well-
being during stressful or difficult times, which proved more
common among caregivers. According to recent estimates,
88% of firms with 200 or more employees have one or more
wellness program offering; these programs may contribute
to the positive association between employment and well-
being.

While employment and caregiving can both prove stressful,
they can also prove rewarding. Previous research indicates
that satisfaction with caregiving and satisfaction with work
were directly associated with better well-being, beyond the
effects of stress in both roles. However, while we found
that among workers, caregivers tended to have healthier behaviors, this difference did not prove sufficient to impact the overall physical health of the caregiving employees. This was demonstrated in the higher physical well-being scores for the employed non-caregivers compared to employed caregivers. It is possible that the health benefits of behavioral changes made during a period of caregiving will accrue to better physical health over time, subsequent to the caregiving role. Future research should address the long-term impact of caregiving on physical health.

Based on our findings, clinical depression may be a factor that contributes to lower well-being among non-employed individuals. We found that lack of employment was more strongly associated with a diagnosis of depression than caregiving status. However, non-employed caregivers, once again, had the lowest well-being ratings of the four study groups. While this result may lead one to infer that lack of employment has a greater impact on depression than caregiving, caution should be exercised in making this assumption. It is also possible that individuals with depression are less likely to find and keep a job, thus contributing to their non-employment status. What is apparent from this analysis is that individuals who are caregivers and non-employed may need additional help or resources in order to continue providing adequate care for their dependents.

Finally, while this study examined the facets of well-being associated with employment and caregiving, we did not look at specific characteristics of the caregiving population that may also impact well-being. Some of these factors include the relationship of the caregiver to the recipient, the number of hours spent caregiving, whether the recipient lives with the caregiver, and whether or not caregiving responsibilities are shared with others. Incorporating these additional considerations into the analysis could enhance understanding of caregivers and how these responsibilities impact the different aspects of well-being. In addition, it may be useful in future research to examine both the well-being of the recipient as well as the caregiver to elucidate how these roles interact and any support provisions that could improve quality of life for individuals in either position.

In conclusion, caregiving is associated with negative emotional and physical consequences, including a much higher rate of depression. Our findings also suggest that within the working population, caregivers have a less positive work experience, overall, compared to non-caregivers. However, it is interesting to note that while caregiving negatively impacts the caregiver’s work experience (compared to other workers who are non-caregivers), having paid work appears to positively impact the caregiver in other areas of well-being (compared to other caregivers who are not working). Thus, well-being appears to be more closely related to employment status than to caregiving status and being non-employed may have a greater negative impact on overall well-being than playing the role of caregiver.

ABOUT HEALTHWAYS
Healthways is the leading provider of specialized, comprehensive solutions to help millions of people maintain or improve their health and well-being and, as a result, reduce overall costs. Healthways’ solutions are designed to keep healthy people healthy, mitigate or eliminate lifestyle risk factors that can lead to disease and optimize care for those with chronic illness. Our proven, evidence-based programs provide highly specific and personalized interventions for each individual in a population, irrespective of age or health status, and are delivered to consumers by phone, mail, internet and face-to-face interactions, both domestically and internationally. Healthways also provides a national, fully accredited complementary and alternative Health Provider Network, offering convenient access to individuals who seek health services outside of, and in conjunction with, the traditional healthcare system.

ABOUT THE CENTER FOR HEALTH RESEARCH
The Center for Health Research performs advanced analytics with data collected from millions of participants over twenty-five years of Healthways programming. Currently, Healthways houses six times the volume of data contained in the Library of Congress. That depth and breadth of information allows the team to conduct a vast range of research, and it is used to advance their thinking in all levels of healthcare. For access to our Virtual Research Library, and the reports published by the team at the Healthways Center for Health Research, go to www.healthways.com/research.

ABOUT AGELAB
AgeLab is a multidisciplinary research program at the Massachusetts Institute of Technology. Based in the Engineering Systems Division, AgeLab integrates research in behavior and technology to produce ideas and innovations that improve the lives of older people and those that care about them. For more information visit web.mit.edu/agelab.
REFERENCES